Online ISSN : 2249-4618
Print ISSN : 0975-5888
DOI : 10.17406/GJMRA

Global Journal

of Medical Research: H

Orthopedic & Musculoskeletal System

Excision and Steinmann Pin

Ankle Musculoskeletal Disorders

Highlights

Custom Antibiotic Spacer Mold

Fibroma of the Lateral Malleolus

Discovering Thoughts, Inventing Future

VOLUME 18 ISSUE 1 VERSION 1.0

Global Journal of Medical Research: H
Orthopedic and Musculoskeletal System

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Volume 18 Issue 1 (Ver. 1.0)

Open Association of Research Society

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USA Tax ID: 98-0673427

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Global Journal of Medical Research: H
Orthopedic and Musculoskeletal System
Volume 18 Issue 1 Version 1.0 Year 2018
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Giant-Cell Tumor of the Patella: Case Report

Istan Irmansyah & Rakhmad Aditya Hernawan

Brawijaya University

Abstract- Giant cell tumor (GCT) is a tumor found most often in the ends of long bones and is essentially located in the epiphyseal or metaphyseal or epiphyseal equivalent portions of bone. It is a locally aggressive neoplasm, generally arising in adults between the ages of 20 and 40 years, clinically possessing metastatic potential. The classic location is around the knee joint and it starts in the epiphysis spreading to the metaphysis and may erode the cortex in 25% of the cases. Approximately 10% of these tumors have a malignant course. The patella is a rare site with a reported incidence of less than one percent. Rare multicentric forms have been reported.

A 14-year-old female from Malang, East Java, presented with a one year history of a progressively growing mass in the left patella associated with slight pain that has been aggravated with activity for 6 months.

Keywords: giant-cell tumor, patella, knee lump, knee pain.

GJMR-H Classification: NLMC Code: WE 850

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Giant-Cell Tumor of the Patella: Case Report

Istan Irmansyah [α] & Rakhmad Aditya Hernawan [σ]

Abstract- Giant cell tumor (GCT) is a tumor found most often in the ends of long bones and is essentially located in the epiphyseal or metaphyseal or epiphyseal equivalent portions of bone. It is a locally aggressive neoplasm, generally arising in adults between the ages of 20 and 40 years, clinically possessing metastatic potential. The classic location is around the knee joint and it starts in the epiphysis spreading to the metaphysis and may erode the cortex in 25% of the cases. Approximately 10% of these tumors have a malignant course. The patella is a rare site with a reported incidence of less than one percent. Rare multicentric forms have been reported.

A 14-year-old female from Malang, East Java, presented with a one year history of a progressively growing mass in the left patella associated with slight pain that has been aggravated with activity for 6 months.

Plain X-ray left knee AP and lateral views reveal expensile lytic lesion in left patella with marked thinning of cortex in anteroinferior aspect with few sclerotic septa within. MRI of left knee shows approximately 3x2x2 cm heterogeneous lobulated expensile soft tissue mass in left patella extending up to the articular surfacewithfluid-fluidappearance. No evidence of extension into the joint space. From fine needle aspiration cytology, resulting giant-cell tumor with deferential diagnosis of aneurysmal bone cyst.

Operation was already performed. Curettage, bone graft and biopsy were taken. Immunocytochemical smear was performed and confirmed as giant-cell tumor of the patella. At present, 6 months after the operation, the patient has no arthralgia and full range of motion for the knee.

Keywords: giant-cell tumor, patella, knee lump, knee pain.

I. Introduction

Giant cell tumor (GCT) is a tumor found most often in the ends of long bones and is essentially located in the epiphyseal or metaphyseal or epiphyseal equivalent portions of bone. It is a locally aggressive neoplasm, generally arising in adults between the ages of 20 and 40 years, clinically possessing metastatic potential.[2] The classic location is around the knee joint and it starts in the epiphysis spreading to the metaphysis and may erode the cortex in 25% of the cases. Approximately 10% of these tumors have a malignant course.[3] The patella is a rare site with a reported incidence of less than onepercent. Rare multicentric forms have been reported.[4]

In this article, we report a case of GCT originating from the left patella which was diagnosed on fine needle aspiration cytology, magnetic resonance imaging and already performed excision, curettage, and bone cement.

II. Case Report

A 14-year-old female from Malang, East Java, presented with a one year history of a progressively growing mass in the left patella associated with slight pain that has aggravated with activity for 6 months. It measured 42 cm in its largest diameters. The overlying skin was normal. She had no pulmonary and other systemic symptoms. All hematological and biochemical investigations were within normal limits.

Patient underwent plain X-ray left knee AP and lateral views. Radiograph reveal expensile lytic lesion in left patella with marked thinning of cortex in anteroinferior aspect with few sclerotic septa within. (FIG.1)

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Fig. 1: Antero-posterior and lateral radiograph showing expensile lytic lesion in left patella

Patient underwent MRI of left knee. T1 and T2 weighted images were obtained in axial and sagittal planes (FIG: 2&3). MRI of left knee shows approximately 3x2x2 cm heterogeneous lobulated expensile soft tissue mass in right patella extending up to the articular surface, and a fluid-fluid level was observed. The possible differential diagnosis from MRI include giant cell tumor or aneurysmal bone cyst. Luckily the articular cartilage at posterosuperior part is still intact.

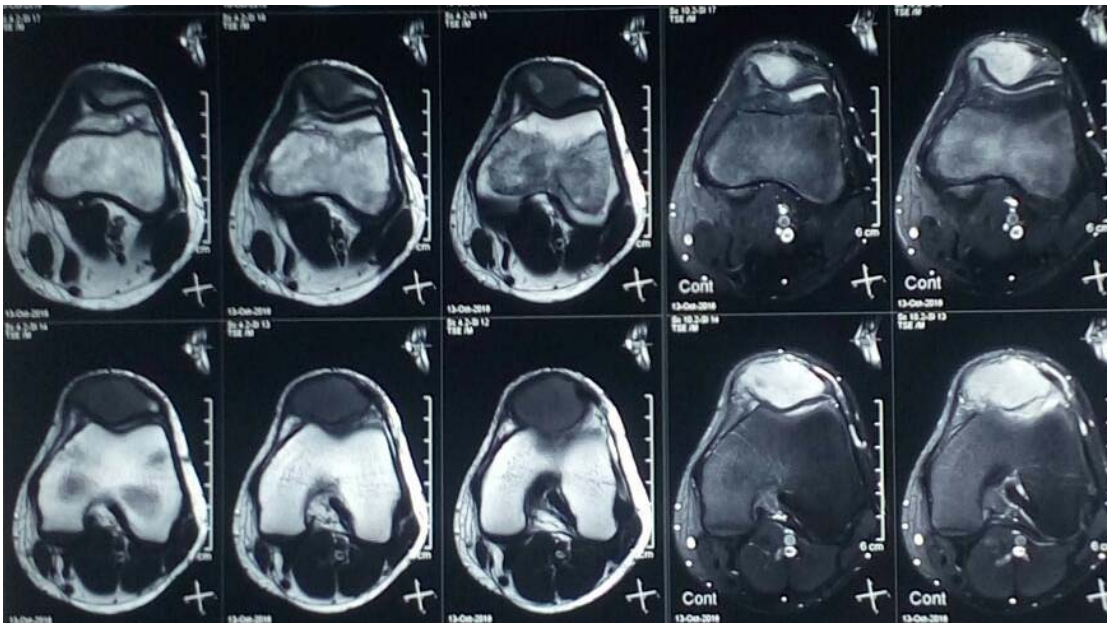

Fig. 2: Axial T1 and T2 MRI show defect in anteroinferior aspect of patella

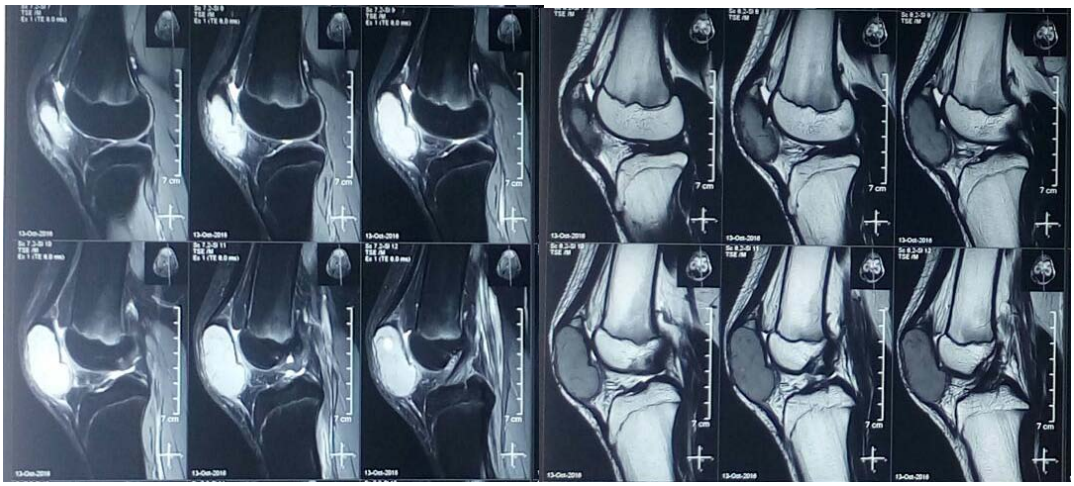

Fig. 3: Sagital T1 and T2 MRI show fluid-fluid level

To confirm the diagnosis, fine needle aspiration was performed at the anteroinferior aspect of patella. Hystopatological finding still cannot differentiate whether this isgiant-cell tumor or aneurysmal bone cyst although multi-nucleated giant cell was already found (FIG.4)

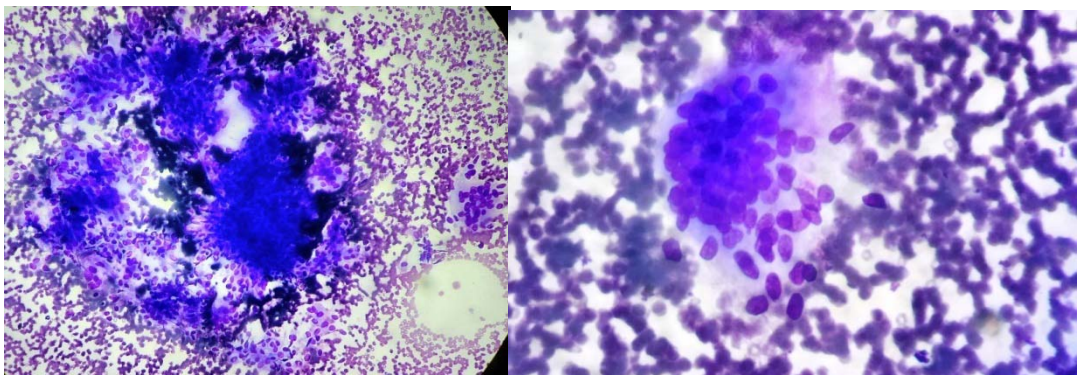

Fig. 4: Multi-nucleated giant cell from fine needle aspiration

At the end of November, curettage of the lesion and bone substitution were performed with general anesthesia. These procedures were performed through an approximately 10 cm longitudinal incision directly above the area. The periosteum was detached from the surface of the patella with a raspatory to make an oval incision. The main part of the tumor was solid and yellow-brown with partial retention of blood (Fig.5). Macroscopically, it appeared to be a giant cell tumor. We carefully removed the contents with a curette, filled the defect with approximately 5g of calcium hydroxyapatite ceramic and fixed it with two screws and closed the incision in a routine manner. X-ray left knee AP and lateral views post surgery were taken to confirm whether the defect was filled with bone substitution component (FIG.6).

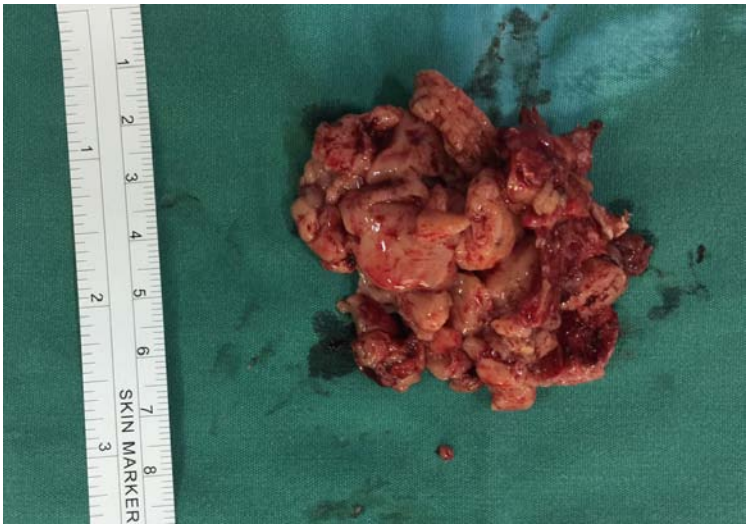

Fig. 5: Macroscopically of the tumours, solid and yellow-brown with partial retention of blood

Fig. 6: Post surgery X-ray AP and lateral of left knee

Hystopathological examination was performed after the surgery, and showed multi-nucleated giant cell with more than 20 nucleus, short spindle shaped cells, bone tissues, and calcification. No cellular atypia and few mitotic figures were observed. On the basis of these findings, the lesion was diagnosed AS a giant-cell tumor rather than as an aneurysmal bone cyst (FIG.7). ImmunohystochemicalWAS performed to confirm the diagnosis and found positive result in CD68 staining (FIG.8). The diagnosis was confirmed to be giant-cell tumor of left patella.

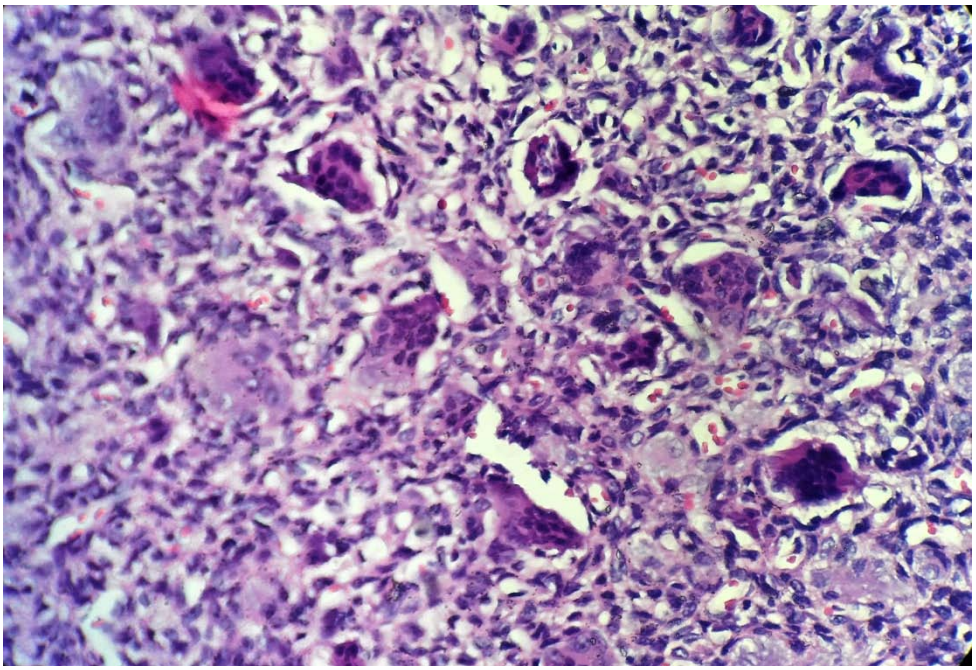

Fig. 7: Hystopathological examination shows multi-nucleated giant cell with more than 20 nucleus, short spindle shaped cells, bone tissues, and calcification

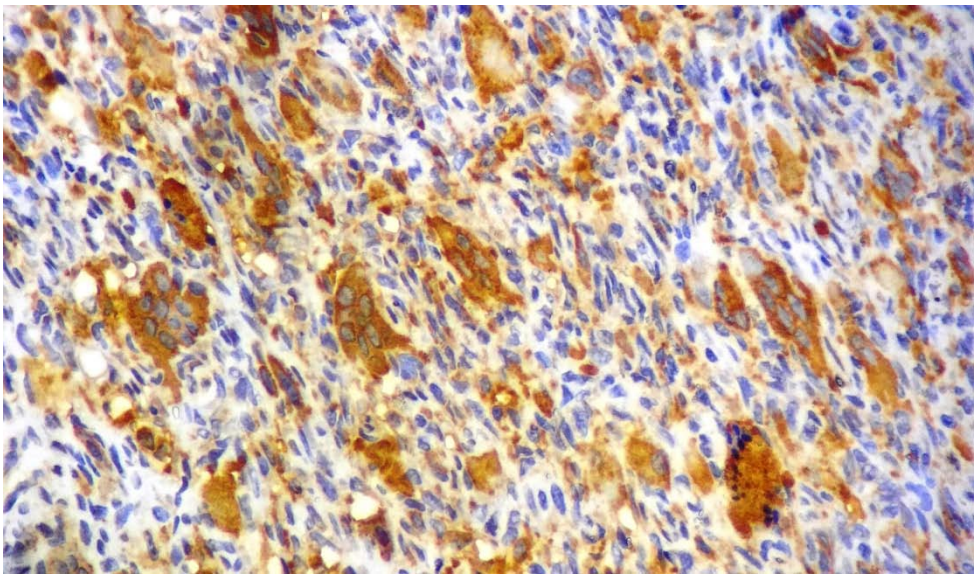

Fig. 8: Immunohystochemical show positif result of CD68 staining

The affected part was immobilized with a splint for approximately 2 weeks after the operation. Weight bearing and range of motion exercises were initiated after the suture was removed. Full weight bearing was allowed by approximately 4 weeks. At present, 6 months after the operation, the patient has no arthralgia and full range of motion for the knee.

III. Discussion

Bone tumors arising in the patella are comparatively rare. According to a survey by the Bone and Soft Tissue Tumor Committee of the Japanese Orthopedic Association, of the 27, 403 primary bone tumor cases were reported for 32 years from 1972 to 2003 in which tumors involved the lower extremities in 70.5% or 13,860 of these cases.[1]However, tumors arising in the patella were encountered in only 75 cases, accounting for 0.5%of all cases. Of these 75, 4 were osteosarcomas, i.e., malignant bone tumors, and 71 were benign bone tumors. The benign tumors included chondroblastoma (n=24), giant cell tumor (n=22), and solitary exostosis (n=14).Less than 50 cases of giant cell tumor of the patella have been reported in the international literature in the developed world.[2]

Clinically, the patients with the patellar GCTs usually complained about knee pains and/or swelling.[3-7] Physical examination may show redness, local heat, swelling, effusion, tenderness, lump, crepitus, and the decrease of motional range.[3-7]The laboratory findings on some severe patients showed an increase of serum alkaline phosphatase (AP) and erythrocyte sediment rate (ESR).[8]

Radiographs revealed an osteolytic lesion of the patella with destruction of the bone, and sometimes, soap bubble appearance.[3] Magnetic resonance imaging (MRI) showed abnormal extension and lesion of the patella, and there may be some evidence of adjacent tissues and sclerotin.[8] Additionally, chest radiography and bone scintigraphy are necessary for GCT patients to determinate the possible metastasis on the lung and other bones.

A needle biopsy or incisional biopsy of the patella is recommended for the diagnosis. The histopathological features of the patellar GCT, which mainly include numerous giant cells, short spindle-shaped cells, bone tissue calcification, and a few mitotic should be distinguished from aneurysmal bone cyst or chondroblastoma. The histological examination of the aggressive GCT showed a compact stroma with nuclear atypia, frequent mitotic figures, hyperchromatism, and the unevenly distributed giant cells.[7]

Curettage with a combination of cryosurgery may be attempted in early stage of the disease but it still carries the risk of recurrence about 25 to 40%.[10] For small, benign GCT (Enneking stage 2), intralesional curettage orpartial patellectomy with filling of the bone void and reconstruction of the extensor mechanism is the first choice in treating GCT of the patella. But if the patellar GCT is extensive or malignant (Enneking stage 2 to 3), patellectomy combined with adjuvant treatment and resection of metastasis is recommended.[8] Resection may be the only form of treatment left in advanced cases which offers good to excellent functional results.[2]

Follow up in such cases have shown a long term good function and no recurrence with patellar resection, thus emphasizing the role of patellectomy in such advanced case.[2]

Future reconstruction procedures using osteo-articular grafts after resection in such advanced cases may be a feasible option.[10]

IV. Conclusion

This case illustrates the fact that giant cell tumors of patella can be mistaken for ABC and other malignant tumors of bone and soft tissues. Fine needle or biopsy would be diagnostic if adequate specimen is obtained and can also confirmed with immunohysto chemical staining. Surgery is the primary mode of treatment for this case. Curettage accompanied with bone substitution and cryosurgery may be attempted in early stage and patellectomy for advance stage. For future reconstruction procedure osteo-articular grafts can be used after resection that may be feasible option for advance cases.

References Références Referencias

1. National Cancer Center: *JOA Musculoskeletal tumor committee: Bone tumor registry in Japan*, Tokyo (2008).
2. Paudel S, Kayastha P, Pokhrel P, Shah A, Ghimire RK, Ansari MA: *Giant Cell Tumor of Patella*: Journal of Institute of Medicine. Kathmandu: 2012, pp. 58-60.
3. Hutagalung, E., *Neoplasma Tulang: Diagnosis danTerapi*, 2005, pp. 41-43.
4. Yoshida Y, Kojima T, Taniguchi M, Osaka S, Tokuhashi Y. Giant-cell tumor of the patella. Acta Med Okayama. 2012; 66:73
5. Ofluoglu O, Donthineni R. Iatrogenic seeding of a giant cell tumor of the patella to the proximal tibia. ClinOrthopRelat Res. 2007; 465:260
6. Malhotra R, Sharma L, Kumar V, Nataraj AR. Giant cell tumor of the patella and its management using a patella, patellar tendon, and tibial tubercle allograft. Knee Surg Sports Traumatol Arthrosc. 2010; 18:167
7. Chakraverty G, Chakraverty U. Late presentation of G.C.T. of the patella. Internet J Orthopedic. Surgery. 2009; 12:1.
8. Song M, Zhang Z, Wu Y, Ma K, Lu M., Primary Tumors of the Patella. Song et al. World Journal of Surgical Oncology. 2015. pp. 13-163.
9. Christopher D., Pathology and Genetics of Tumours of Soft Tissue and Bone. 2002, pp. 309-312.
10. Carneaale, P.G. *Sometimes malignant tumours of bone, in Camphell's operative orthopaedics*. 7th ed. St. Louia, Moaby, 1987, pp. 765-805.

Global Journal of Medical Research: H
Orthopedic and Musculoskeletal System
Volume 18 Issue 1 Version 1.0 Year 2018
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Chondromyxoid Fibroma of the Lateral Malleolus – En-Block Excision and Steinmann Pin Stabilisation of the Ankle

C. Fletcher

Abstract- We report a case of a 25-year-old male with a chondromyxoid fibroma located in the lateral malleolus. This may be considered to be a rare tumour in an unusual location. The tumour was treated via an en-block excision and the ankle was stabilised with a Steinmann pin. The original plan was that the Steinmann pin was to provide temporary stabilisation while awaiting definitive histology. Ankle arthrodesis was supposed to be performed at a later date if the histology confirmed a benign tumour. Delayed wound healing resulted in the Steinmann pin being left in situ for twelve weeks. Two years post Steinmann pin removal; there was no clinical or radiological evidence of tumour recurrence or ankle instability. The patient was satisfied with his function and a secondary procedure was deemed unnecessary. The surgical options for benign distal fibular tumours including chondromyxoid fibroma are discussed below.

Keywords: *chondromyxoid fibroma, lateral malleolus, excision, reconstruction.*

GJMR-H Classification: *NLMC Code: WE 880*

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Keywords: chondromyxoid fibroma, lateral malleolus, excision, reconstruction.

I. Introduction

Chondromyxoid fibroma is a rare, slow-growing tumour accounting for less than 1% of all primary bone tumours. It tends to undergo regional enlargement towards local tissues. According to the world health organization; it is a benign tumour with areas which are lobulated and has zones which are round or fusiform separated by abundant intercellular myxoid, chondroid and fibrinoid material as well as varying forms of multinucleated cells (1). The fibrotic areas are as a result of repair of degenerated areas and the myxomatous zones are as a result of necrosis of the chondroid tissue (1). The tumour is more common in males and it is most commonly located in the proximal tibia, distal femur, pelvis and foot (2). Histologically, it is not uncommon to be confused with more aggressive tumours. Chondromyxoid fibromas when treated by excision do not tend to recur and there are no reports of metastasis (2).

II. Case Presentation

A 25-year-old unemployed male presented with complaints of a hard, painful mass on the lateral right ankle, which was gradually increasing in size over one year. The pain was worse at night and after prolonged weight bearing. The intensity of the pain was progressively worsening over the previous four weeks, and this was associated with mild limping. There was no history of trauma.

On examination, there was a 9 by 5 cm hard mass with hyper pigmented overlying skin (see fig. 1). The mass was nonpulsatile, nontender, non mobile, and was not fluctuant or warm. There were no ulcers, no evidence of surrounding oedema and no neurovascular deficits. The range of motion of the ankle and subtalar joints was limited.

Radiographs revealed an oval, expansile, lobulated cystic lesion. There was obvious soft tissue invasion laterally and medially, there was a thin peripheral sclerotic rim (see fig. 2).

Core needle biopsy suggested a chondromyxoid fibroma. Preoperatively a staged procedure was planned because of the following factors: 1) The rarity of the diagnosis of chondromyxoid fibroma of the lateral malleolus, 2) The soft tissue invasion and 3) Chondromyxoid fibroma may be confused with malignancies histologically. The plan was for definitive histology to be obtained prior to performing a definitive procedure. Stage one consisted of an en-block excision and Steinmann pin stabilisation of the ankle. Stage two would have been definitive ankle arthrodesis using large fragment cancellous screws, if the post excision histology confirmed a benign tumour. Via a lateral approach (see fig. 3), the fibula was resected 3 cm proximal to the gross tumour (see fig. 4). The distal resection was just distal to the fibular tip. The lateral ligamentous complex was not readily discernible due to scar tissue. There was cortical irregularity of the tibia (see fig. 5) adjacent to the tumour. It was uncertain as to whether or not this was due to a simple mass effect of the distal fibular tumour. Grossly, a complete en-block resection was achieved (see fig. 6). The histological diagnosis remained unchanged post excision. Initial postoperative radiographs demonstrated a reduced ankle as well as complete tumour resection (see fig. 7 and fig. 8). The wound took twelve weeks to heal and the Steinmann pin was left in situ over that duration. At the two year follow up assessment; his ankle and subtalar joints remained stiff however he did not have any complaints in terms of functional limitation.

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His ankle remained stable and pain free. There was no clinical or radiological evidence of tumour recurrence.

III. Discussion

Chondromyxoid fibroma (CMF) is a benign, locally aggressive bone tumour which has lobulated areas of spindle-shaped or stellate cells with significant amounts of myxoid or chondroid intercellular material. A literature review of distal fibular tumours only consists of case reports and case series regardless of the diagnosis (3). Sharma et al. reported on the 40-year experience of CMF in the foot and ankle area from a bone registry. There were 10 cases with a mean patient age of 19 years and none of those tumours were located in the fibula (4). Persian et al. reported on all the tumours in the distal fibula in their hospital and none of the tumours were CMF. The differential diagnosis seen in that report included angioma, fibroma, lung adenocarcinoma metastasis, aneurismal bone cyst, schwannoma, osteochondroma and multifocal mesenchymal neoplasia. Giant Cell Tumour and chondrosarcoma (5) are other differentials.

Due to the rarity of distal fibular tumours, and the contribution of the distal fibula in the biomechanics of the ankle, the treatment remains controversial (3). Post resection of the distal fibula, numerous restraints are lost and this has formed the basis for ankle reconstruction to avoid ankle instability (3). The ankle is a complex formed by the lower fibular end, distal tibia, and talus along with complexed ligamentous supports. It is surrounded by a thin capsule which is weak anteriorly and posterior, however there are numerous static and dynamic stabilisers laterally and medially. The lateral malleolar tip is distal and posterior to the medial malleolar tip which limits eversion while simultaneously acting as a lateral buttress (6).

When the core needle biopsy suggested a CMF, it was recognised that this rare diagnosis may be confused with a more common malignant diagnosis such as a chondrosarcoma. A malignant diagnosis was also a consideration because of the cortical breach of the fibula and the irregularity of the tibial cortex. The stabilisation with a Steinmann pin was meant to be temporary, until the definitive diagnosis was made post resection. The delayed wound healing prevented the surgical team from undergoing a secondary procedure. The Steinmann pin was thus unintentionally definitive fixation.

Berenstein-Weyel et al. found only 3 cases of CMF in the lateral malleolus in their literature review. The first case was a 28-year-old patient who had intralesional curettage, cementation and intramedullary Kirshner wiring (8). The second case was a 25-year-old female with a recurrent CMF. The initial procedure was curettage without grafting. This was revised two years later with an en-block resection of the distal 12cm of the fibula and allograft reconstruction (9). The allograft was fixed onto the native fibula with a plate and screw construct along with a syndesmotic screw. The third case was a 27-year-old female whose tumour did not have a cortical breach and was therefore amenable to an intralesional excision followed by phenolisation, cementation and Steinmann pin stabilisation in the fibula (6). The index case however required en-block excision because unlike the first and third cases above, there was lateral cortical breach with soft tissue invasion.

Berenstein-Weyel et al reported on a case of CMF which was successfully solely treated with radiofrequency ablation in an 11-year-old patient with a 4cm lesion. Regardless of the specific diagnosis, surgical treatment usually has good outcome in all benign cases involving the distal fibula (3).

The more commonly used reconstructive options post resection of the distal fibula in the adult population includes:

1) Ipsilateral fibular transplantation (5)
2) Non-anatomic soft tissue reconstruction using peroneus brevis (10)
3) Osteoarticular allograft (11)
4) Ankle arthrodesis (3)

Nadkarni et al. reported on reversing the proximal fibula 180° and then incorporated the head of fibula into the ankle mortise. The reversed portion was fixed to the remaining fibula using a plate and screw construct plus a syndesmotic screw. The lateral ligamentous complex was also sutured. This was followed by a protocol involving non weight bearing for three months and full weight bearing at six months. This was part of the reason why the Steinmann pin was retained for twelve weeks in addition to the fact that the wound took the same duration to completely heal.

Kumar et al. described transecting the peroneus brevis tendon at the myotendinous junction then suturing this to the anterior talofibular and calcaneofibular ligaments before tenodesis was done to the distal tibia. This was followed by six weeks cast immobilisation. Aside from the delayed wound healing, this was not contemplated as a secondary procedure as the lateral ligamentous complex was compromised due to the presence of poor quality scar tissue. Soft tissue reconstruction has been found to be less stable than bony procedures (5), however it avoids the reduced function as well as non-union which are both potentially associated with arthrodesis (10). The reduced function from ankle arthrodesis is due to an alteration of the gait pattern while completely restricting the range of motion. Soft tissue reconstruction also avoids the non-union risk associated with autologous grafting or allograft, post excision. Additionally, there is also a lower infection risk due to a lack of implants involved in the procedure (4).

Jamshidi et al. reported union in all four cases where allograft was fixed to the native bone with a plate

and screw construct with a separate syndesmotic screw. Average union time was twelve months. One case had an asymptomatic breakage of the syndesmotic screw and another had a 15 degree late valgus deformity. The patients all had favourable ankle scores including favourable ankle range of motion (11). In our setting, there is no local bone bank and the cost of procuring the allograft would have been prohibitive.

We believe that this procedure may be considered in any patient with a medical condition which predisposes to poor wound healing or if a patient has any significant risk factor which impairs wound healing. Another potential group of patients to consider are low demand patients in whom reduced range of motion of the ankle will not significantly impair their ability to perform their activities of daily living. Patients who are in an environment with limited resources including implants and equipment may also benefit. The procedure is technically straight forward and reproducible with minimal cost. Our unemployed patient was unable to afford any implants hence fixation options were significantly limited. The period of non weight bearing is similar to the much more technically demanding procedures. There is an avoidance of a non-union risk which may be a complication of both arthrodesis, and plate and screw fixation of the bone graft (whether allograft or autogenous grafting) and the native bone. There is also the avoidance of dissection in the common personal nerve territory (5) or an incongruent fibular head articulation after the 180° reversal procedure utilised by Nadkarni.

Currently, the procedure of choice for distal fibular benign tumours is determined by the surgeon's experience and preference, as opposed to the nature and tumour extent, which reflects the lack of guidelines and high-quality evidence in the current literature (3).

Declaration of interest

The author has no conflict of interest relevant to this article.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors, and no material support of any kind was received.

References Références Referencias

1. Gateless, S., Wilkins, R., Conrad 2nd, EU. (1996). Benign bone tumours. Inkster Course Lect. 45: 425–46.
2. Lersundi, A., Mankind, H.J., Morikis, A., Cornice, FJ. (2005). Chondromyxoid fibro: a rarely encountered and puzzling tumour. Clan Northup Relate Res 439:171–5.
3. Persian, C., Marlette, E., Spinally, M.S., Grace, C., Fabricant, C., Manfully, N., Macabre, G., (2012). Clinical management and surgical treatment of distal fibular tumours: a case series and review of the literature. International Orthopaedics (SICOT). 36: 1907–1913.
4. Sharma, I.H., Jane, M. J., Reid, R. (2006). Chondromyxoid fibro of the foot and ankle: 40 years' Scottish bone tumour registry experience. International Orthopaedics (SICOT). 30: 205–209.
5. Nadkarni, S., Pundit, A.S., Nair, R.V. (2015). Giant Cell Tumour of distal fibula managed by en block resection and reconstruction with ipsilateral proximal fibula. Journal of Orthopaedic Case Reports. 5(1): 52-54.
6. Di Giorgio, L., Touloupakis, G., Mastantuono, M., Vitally, F., Imperator L. (2011). Chondromyxoid fibro of the lateral alveolus: a case report. Journal of Orthopaedic Surgery. 19(2):247-9.
7. Berenstein-Weyel, J.T., Label, E., Katz, D., Applaud, Y., Geyser, A. (2017). Chondromyxoid fibro of the distal fibula treated by percutaneous radiofrequency ablation. Journal of Orthopaedic Surgery. 25(2)1-4.
8. Fotiadis, E., Haritopoulos, P., Samoladas, E. (2008) Chondromyxoid fibro: a rare tumour with an unusual location. Arch Northup Trauma Surg. 128: 371–375.
9. Sirveaux, F., Roche, O., Hutten, P. (2004). Distal fibula reconstruction using a frozen allograft: a case report. Rev Chirr Northup Reparative Appear Mot. 90: 581–585.
10. Kumar, A., Naidu, M.J., Mandela, B. (2015). Aneurismal Bone Cyst of Distal Fibula Treated With En-Bloc Excision and Ligament us Ankle Stabilisation: A Rare Case Report. 14(4): 39-41.
11. Jamshidi, K., Masher, F.N., Mascara, Z. (2013). Reconstruction of distal fibula with osteoarticular allograft after tumour resection Foot and Ankle Surgery (19) 31–35.

Figure 1: Showing mass and hyperpigmented skin

Figure 2: Radiograph (AP ankle) demonstrating tumour with lateral cortical breach

Figure 3: Showing lateral approach to the mass

Figure 4: Showing proximal resection margin

Figure 5: Showing cortical irregularity of tibia, and Steinmann pin in situ

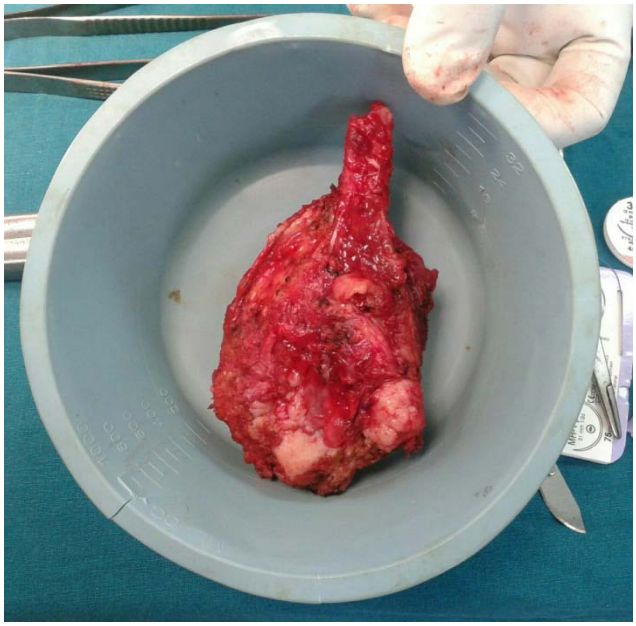

Figure 6: Showing en block resection

Figure 7: Lateral ankle x-ray day 1 post-op

Figure 8: AP ankle day 1 post-op

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Global Journal of Medical Research: H
Orthopedic and Musculoskeletal System
Volume 18 Issue 1 Version 1.0 Year 2018
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Prevalence of Foot and Ankle Musculoskeletal Disorders in Nurses of Lahore, Pakistan

Sofia Tariq, Farooq Islam, Ashfaq Ahmad & Syed Amir Gilani

Abstract- *Introduction:* Musculoskeletal disorders are one of main leading problems in nurses. It is mainly important to understand the causes of musculoskeletal disorders among nurses. In nurses Foot/ankle disorders are very common and ankle is the most common part to sustain injuries. The current study found out rate and prevalence of foot or ankle musculoskeletal disorders in nurses. It was a cross-sectional survey study.

Settings: Data was collected from Carian Hospital, Jinnah Hospital, Ganga Ram Hospital, Children Hospital and Services Hospital.

Methods: 369 nurses participated in the survey. All participants were females and their minimum age was ±20 year, maximum age was ±57 year and their mean age was ±31 years. The duration of the study takes six months to complete. Nordic Musculoskeletal questionnaire (NMQ) was use to collect the data from hospitals of Lahore.

Results: Prevalence of foot and ankle pain was 47.4%, 35.5% in last 12 months and 78% in last 7 days.

Keywords: *prevalence, musculoskeletal disorders, pain, nurses, foot.*

GJMR-H Classification: *NLMC Code: WE 880*

Strictly as per the compliance and regulations of:

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Sofia Tariq [α], Farooq Islam [σ], Ashfaq Ahmad [ρ] & Syed Amir Gilani [ω]

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Results: Prevalence of foot and ankle pain was 47.4%, 35.5% in last 12 months and 78% in last 7 days.

Conclusion: Foot and ankle musculoskeletal disorders were common problem among nurses. We recommended nurses be provided with important education regarding self-care strategies and treatment plan and need to some break during working time.

Keywords: prevalence, musculoskeletal disorders, pain, nurses, foot.

I. Introduction

Musculoskeletal disorders are one of main leading problems in nurses[1]. Musculoskeletal disorders (MSD) are refer to define the conditions, in which muscles, ligaments, and tendons, joints, cartilage and spinal discs can are support the human structure[2]. Musculoskeletal disorders (MSDs) are one of the most essential reasons of occupational harm and disability in healthcare profession[3]. Common MSD include tendinopathy, Ligament sprain, Tension neck syndrome, Thoracic outlet compression, Rotator cuff tendonitis, Epicondylitis, Digital Neuritis, Trigger thumb, Degenerative disc disease, Ruptured disc, Mechanical back syndrome and many more[4]. Musculoskeletal disorders affect the human body movement, function and system[5]. Musculoskeletal problem are the common problem in nurses because it provides continuous care of the patient. It is one of the common problem worldwide in nursing population[6].

Common symptoms are occurring when patients have musculoskeletal disorder, in which include Localized or Deep pain that can worse with movement, Sleep disturbance of patient, quickly fatigue, feels like muscle pulling, deep aching pain, burning of the muscles, stiffness of the body, and many more which may differ from each patient[7]. There are so many musculoskeletal disorders which are reported. Such problems can reduce the quality of life, duration of work is minimized, behavior of individual is changed, and patients become impatient[8].

Main causes of musculoskeletal disorders are due to repetitive movements, fractures, fall, heavy lifting, dislocation, sprain, strain, poor balance, and overuse of muscle, poor posture and immobilization[9]. But there are three primary risk factors repetitive movements, poor posture and high force levels which are main leading cause of musculoskeletal disorders[10]. Studies reported high prevalence rate is low back pain ranging from 32%[5, 11]to 90%[12, 13] but it is also common in the other body areas like knee(7%[11] to 68%[14]), neck (12%[11] to 52%[15]) shoulder(17%[11] to 48%[14]) and foot/ankle. It is mainly important to understand the causes and musculoskeletal injuries among nurses[12]. In nurses Foot/ankle disorders are very common and ankle is the most common part to injured[5]. Job demand is directly related to the problem of musculoskeletal disorders among health professional especially nurses[8]. A study was conducted in different cities of Pakistan to understand the ratio of MSDs prevailing in the country among nurses. The result showed that the 78.5% of nurses are having disorders and are suffering from pain of some kind.[16]

There are number of studies which reviewed from 1990, investigating the prevalence of musculoskeletal disorders in nurses and reported that foot/ankle problem ranged from 3.7 to 40%[11, 12]. A small number of studies since then reported the prevalence of foot/ankle musculoskeletal problems were ranging from 1.8 [2, 5] to 74%[1, 11].

The rational of this study is to find out the prevalence of foot and ankle musculoskeletal disorders in nurses. This type of study has not been studied previously in Pakistan. Most reports on musculoskeletal disorders are from other countries. That's why this study was conducted in Lahore.

II. Methodology

It was a cross-sectional survey study. Sample size 369 was calculated using the online epi-tools

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software for sample size calculation formula $n = \frac{z^2 \times p(1-p)}{d^2}$[17]. Nordic Musculoskeletal Questionnaire (NMQ)[18] was used to collect the data from five Government hospitals Carian hospital, Jinnah hospital, Service hospital, Children hospital and Ganga ram hospitals of Lahore Pakistan. Data analysis was done by statistical package for social science (Spss) 21. Qualitative variables were displayed through, bar charts, tables. The duration of the study took six months to complete. In inclusion criteria only female nurses were involved and their age in between 20 to 60 years, Nurses who are in practice. Who work minimum 5 hours a day and 4 days a week. And work experience of at least 3 months. Exclusion criteria was nurses with any systemic disease like Diabetes Mellitus, Hypertension, Chronic renal failure, Cardio vascular disorders, Malignancy, Rheumatoid Arthritis, nurses who were not willing to fill the Questionnaire, Recent trauma, fracture or Surgery and any previous history of surgery for cervical region.

III. Results

In table no 1 study results showed total patients were 369 out of these 174(47.2%) complain about pain or discomfort and 195(52.8%) respondents not complained about any pain or discomfort. In table no 2study results showed that from the total sample space 238 (64.5%) women have no pain, 37(10.0%) women have pain in the right foot/ankle, 72(19.5%) women have pain in left foot/ankle and 72 (19.5%) women have pain in both foot/ankle in last 12 months.

Table 1: Frequency distribution of foot/ankle trouble (ache, pain, discomfort)

Pain	Frequency	Percent
No	195	52.8
Yes	174	47.2
Total	**369**	**100.0**

Fig. 1: Have you ever had foot/ankle trouble (ache, pain, discomfort)

Table 2: Frequency distribution of pain from last 12 months

Valid	Frequency	Percent
No	238	64.5
Yes, in my right foot/ankle	37	10.0
Yes, in my left foot/ankle	22	6.0
Yes, in both foot/ankle	72	19.5
Total	**369**	**100.0**

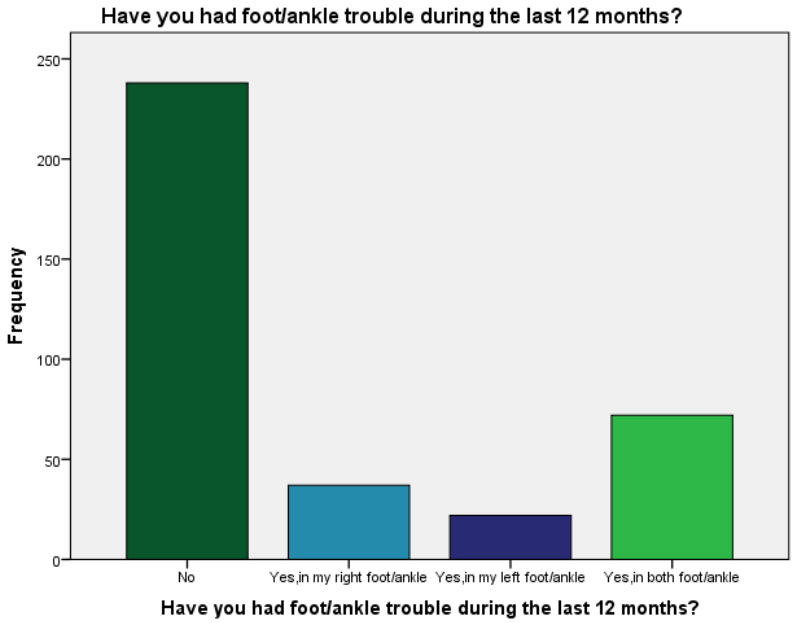

Fig. 2: Have you had foot/ankle trouble during last 12 months?

IV. Discussion

The current study has been concluded to determine the prevalence of foot and ankle musculoskeletal disorders in nurses. Total 369 nurses were selected from sampling process. Nordic Musculoskeletal questionnaire was used to determine the discomfort and pain in foot and ankle. This study of 369 nurses showed that nearly 35.5% nurses reported some form of musculoskeletal discomfort, trouble, pain during the last 12 months and more than 78% during last 7 days in survey which is conducted in hospitals of Lahore, Pakistan.

Foot and ankle musculoskeletal disorders in this type of study have not been studied previously in Pakistan. Most reports on musculoskeletal disorders are from other countries. chosen different hospitals that are not different from other hospitals in Pakistan, carrying out the same type of work. This study results should therefore be representative of this type of work in hospitals of Lahore. All nurses are chosen for the research consented to take an interest therefore we have no selection bias.

A study was conducted in the tertiary care clinic which was located in the city of Peshawar, Pakistan. The questionnaire was distributed to among 300 survey population, out of which 100 were dentists, 100 were surgeons and 100 were physicians. After the evaluation the results were surprising, as the dentists have the highest percentage of WMSDs, following them were surgeons and then physicians. The percentage was 89, 87 and 84 respectively[19]. A research was conducted in pediatric hospital in Brisbane, Australia. 416 nurses were eligible to participate in study. Nordic musculoskeletal questionnaire was distributed among nurses population. After the result 73% response rate was achieved[12]. Daraiseh *et al.*, have reviewed various studies and they pointed out that the studies conducted from 1990s, have resulted that the nurses who were facing the problems related to foot and ankle their percentage was almost 40%[20].A cross-sectional survey was conducted in USA, on 274 survey population, out of which 74 percent have responded. The result showed that the 78.5% of nurses are having disorders and are suffering from pain[15].

This result contradicts with this study in which 369 Nordic musculoskeletal questionnaires were distributed in nurses' population and result percentage was 47.2% respectively.

In previous study, 50% nurses have pain in the last 12 months and 40% nurses have pain in last 7 days[12]. While in this study 35.5% nurses have pain in last 12 months and 78% have pain in last 7 days.

The objective of my study was to determine the prevalence of foot and ankle pain and discomfort in nurses of Lahore, Pakistan. A cross-sectional investigation was started to find out the prevalence and in nurses in which study participants are 369 from Lahore hospitals and only females 369(100%) were included. 174 (47.2%) nurses experienced Foot/ankle discomfort while 195(52.8%) nurses were free of foot and ankle discomfort and pain. This study showed that foot and ankle pain are affected by prolonged standing and weekly hours of time work which is spent in hospital.

V. Conclusion

Foot and ankle musculoskeletal disorders were common problem among nurses. It would be recommended that nurses be provided with important

education regarding self-care strategies and treatment plan and need to some break during working time.

References Références Referencias

1. Sheikhzadeh A, Gore C, Zuckerman JD, Nordin M. Perioperating nurses and technicians' perceptions of ergonomic risk factors in the surgical environment. *Applied ergonomics* 2009; **40**(5): 833-9.
2. Smith DR, Mihashi M, Adachi Y, Koga H, Ishitake T. A detailed analysis of musculoskeletal disorder risk factors among Japanese nurses. *Journal of safety research* 2006; **37**(2): 195-200.
3. Cromie JE, Robertson VJ, Best MO. Work-related musculoskeletal disorders in physical therapists: prevalence, severity, risks, and responses. *Physical therapy* 2000; **80**(4): 336-51.
4. Magnago TSBdS, Lisboa MTL, Griep RH, et al. Nursing workers: work conditions, social-demographic characteristics and skeletal muscle disturbances. *Acta Paulista de Enfermagem* 2010; **23**(2): 187-93.
5. Bálint GP, Korda J, Hangody L, Bálint PV. Foot and ankle disorders. *Best Practice & Research Clinical Rheumatology* 2003; **17**(1): 87-111.
6. Asghar F, Ehsan S, Arshad HS. Frequency of Work Related Musculoskeletal Disorders among Nurses Working in Hospitals of Lahore.
7. Choobineh A, Tabatabaei SH, Mokhtarzadeh A, Salehi M. Musculoskeletal problems among workers of an Iranian rubber factory. *Journal of occupational health* 2007; **49**(5): 418-23.
8. Anap DB, Iyer C, Rao K. Work related musculoskeletal disorders among hospital nurses in rural Maharashtra, India: a multi centre survey. *International Journal of Research in Medical Sciences* 2017; **1**(2): 101-7.
9. Jaworek M, Marek T, Karwowski W, Andrzejczak C, Genaidy AM. Burnout syndrome as a mediator for the effect of work-related factors on musculoskeletal complaints among hospital nurses. *International Journal of Industrial Ergonomics* 2010; **40**(3): 368-75.
10. Deros BM, Adilah M, Daruis D. A study on the prevalence of musculoskeletal disorders among health care workers at a private medical centre. Biomedical Engineering and Sciences (IECBES), 2014 IEEE Conference on; 2014: IEEE; 2014. p. 403-7.
11. Hou J-Y, Shiao JS-C. Risk factors for musculoskeletal discomfort in nurses. *Journal of Nursing Research* 2006; **14**(3): 228-36.
12. Reed LF, Battistutta D, Young J, Newman B. Prevalence and risk factors for foot and ankle musculoskeletal disorders experienced by nurses. *BMC musculoskeletal disorders* 2014; **15**(1): 196.
13. Mitchell T, O'Sullivan PB, Burnett AF, Straker L, Rudd C. Low back pain characteristics from undergraduate student to working nurse in Australia: a cross-sectional survey. *International journal of nursing studies* 2008; **45**(11): 1636-44.
14. Mehrdad R, Dennerlein JT, Haghighat M, Aminian O. Association between psychosocial factors and musculoskeletal symptoms among Iranian nurses. *American journal of industrial medicine* 2010; **53**(10): 1032-9.
15. Harcombe H, McBride D, Derrett S, Gray A. Prevalence and impact of musculoskeletal disorders in New Zealand nurses, postal workers and office workers. *Australian and New Zealand journal of public health* 2009; **33**(5): 437-41.
16. Naeem A, Umar M, Malik AN, ur Rehman S. Occupationally related low back pain and associated factors in nurses. *Rawal Medical Journal* 2015; **40**(2).
17. Ausvet. EpiTools epidemiological calculators. *Evan Sergeant* 2017.
18. Kuorinka I, Jonsson B, Kilbom A, et al. Standardised Nordic questionnaires for the analysis of musculoskeletal symptoms. *Applied ergonomics* 1987; **18**(3): 233-7.
19. Lorusso A, Bruno S, L'abbate N. A review of low back pain and musculoskeletal disorders among Italian nursing personnel. *Industrial health* 2007; **45** (5): 637-44.
20. Daraiseh N, Genaidy A, Karwowski W, Davis L, Stambough J, Huston R. Musculoskeletal outcomes in multiple body regions and work effects among nurses: the effects of stressful and stimulating working conditions. *Ergonomics* 2003; **46**(12): 1178-99.

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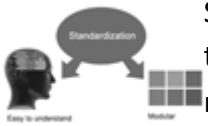

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- The Fellow can earn 60% of sales proceeds from the sale of reference/review books/literature/publishing of research paper.
- Fellow can also join as paid peer reviewer and earn 15% remuneration of author charges and can also get an opportunity to join as member of the Editorial Board of Global Journals Incorporation (USA)
- • This individual has learned the basic methods of applying those concepts and techniques to common challenging situations. This individual has further demonstrated an in–depth understanding of the application of suitable techniques to a particular area of research practice.

Note :

"

- In future, if the board feels the necessity to change any board member, the same can be done with the consent of the chairperson along with anyone board member without our approval.
- In case, the chairperson needs to be replaced then consent of 2/3rd board members are required and they are also required to jointly pass the resolution copy of which should be sent to us. In such case, it will be compulsory to obtain our approval before replacement.
- In case of "Difference of Opinion [if any]" among the Board members, our decision will be final and binding to everyone.

"

Preferred Author Guidelines

We accept the manuscript submissions in any standard (generic) format.

We typeset manuscripts using advanced typesetting tools like Adobe In Design, CorelDraw, TeXnicCenter, and TeXStudio. We usually recommend authors submit their research using any standard format they are comfortable with, and let Global Journals do the rest.

Alternatively, you can download our basic template from https://globaljournals.org/Template

Authors should submit their complete paper/article, including text illustrations, graphics, conclusions, artwork, and tables. Authors who are not able to submit manuscript using the form above can email the manuscript department at submit@globaljournals.org or get in touch with chiefeditor@globaljournals.org if they wish to send the abstract before submission.

Before and during Submission

Authors must ensure the information provided during the submission of a paper is authentic. Please go through the following checklist before submitting:

1. Authors must go through the complete author guideline and understand and *agree to Global Journals' ethics and code of conduct,* along with author responsibilities.
2. Authors must accept the privacy policy, terms, and conditions of Global Journals.
3. Ensure corresponding author's email address and postal address are accurate and reachable.
4. Manuscript to be submitted must include keywords, an abstract, a paper title, co-author(s') names and details (email address, name, phone number, and institution), figures and illustrations in vector format including appropriate captions, tables, including titles and footnotes, a conclusion, results, acknowledgments and references.
5. Authors should submit paper in a ZIP archive if any supplementary files are required along with the paper.
6. Proper permissions must be acquired for the use of any copyrighted material.
7. Manuscript submitted *must not have been submitted or published elsewhere* and all authors must be aware of the submission.

Declaration of Conflicts of Interest

It is required for authors to declare all financial, institutional, and personal relationships with other individuals and organizations that could influence (bias) their research.

Policy on Plagiarism

Plagiarism is not acceptable in Global Journals submissions at all.

Plagiarized content will not be considered for publication. We reserve the right to inform authors' institutions about plagiarism detected either before or after publication. If plagiarism is identified, we will follow COPE guidelines:

Authors are solely responsible for all the plagiarism that is found. The author must not fabricate, falsify or plagiarize existing research data. The following, if copied, will be considered plagiarism:

- Words (language)
- Ideas
- Findings
- Writings
- Diagrams
- Graphs
- Illustrations
- Lectures

- Printed material
- Graphic representations
- Computer programs
- Electronic material
- Any other original work

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1. Substantial contributions to the conception and acquisition of data, analysis, and interpretation of findings.
2. Drafting the paper and revising it critically regarding important academic content.
3. Final approval of the version of the paper to be published.

Changes in Authorship

The corresponding author should mention the name and complete details of all co-authors during submission and in manuscript. We support addition, rearrangement, manipulation, and deletions in authors list till the early view publication of the journal. We expect that corresponding author will notify all co-authors of submission. We follow COPE guidelines for changes in authorship.

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Unless specified in the notification, the Editorial Board's decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

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Preparing your Manuscript

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.

Manuscript Style Instruction (Optional)

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11'", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

Structure and Format of Manuscript

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

a) A title which should be relevant to the theme of the paper.
b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
d) An introduction, giving fundamental background objectives.
e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
f) Results which should be presented concisely by well-designed tables and figures.
g) Suitable statistical data should also be given.
h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
j) There should be brief acknowledgments.
k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.

Format Structure

It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

All manuscripts submitted to Global Journals should include:

Title

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

Author details

The full postal address of any related author(s) must be specified.

Abstract

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Keywords

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, “What words would a source have to include to be truly valuable in a research paper?” Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods

Numerical methods used should be transparent and, where appropriate, supported by references.

Abbreviations

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

Formulas and equations

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

Tables, Figures, and Figure Legends

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.

Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

Preparation of Eletronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for writing a good quality Medical Research Paper

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of medical research then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.

6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.

Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

21. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

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Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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ISSN 9755896