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Dentistry & Otolaryngology

Tumor of the Temporal Bone

Rare Case of Malignant Tumor

Highlights

PRF and Graft Augmentation

Adenocarcinoma of External Auditory

Discovering Thoughts, Inventing Future

VOLUME 19 ISSUE 2 VERSION 1.0

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Neurofibroma of Tongue – A Rare Case Report

By Ballage A, Mennouni. M A, Mkhatri. A, Rouadi S, Abada R L, Roubal M & Mahtar M

Ibn Rochd University Hospital

Abstract- Neurogenic tumors are rare in the oral cavity. Neurofibroma is a rare benign nonodontogenic tumor which may present either as a solitary lesion or as part of the generalized syndrome of neurofibromatosis or von Recklinghausen's disease (VRD) of the skin. The rarity of benign lingual tumors and their distinctive histopathological features have prompted us to report this case.

Keywords: *neurofibroma, histopathology, tongue.*

GJMR-J Classification: *NLMC Code: WU 158*

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Neurofibroma of Tongue – A Rare Case Report

Ballage A [α], Mennouni. M A [σ], Mkhatri. A [ρ], Rouadi S [ω], Abada R L [¥], Roubal M [§] & Mahtar M [χ]

Abstract- Neurogenic tumors are rare in the oral cavity. Neurofibroma is a rare benign nonodontogenic tumor which may present either as a solitary lesion or as part of the generalized syndrome of neurofibromatosis or von Recklinghausen's disease (VRD) of the skin. The rarity of benign lingual tumors and their distinctive histopathological features have prompted us to report this case.

Keywords: neurofibroma, histopathology, tongue.

I. Introduction

Neurofibromas are rare in head & neck region but are the most common among neural lesion [1]. Plexiform neurofibroma is least common and is pathognomic of von Recklinghausen disease, seen in 17-30% of patient, caused by mutation of NF1 gene in chromosome 17. Up to 10% of these lesions are associated with neurofibromatosis, an autosomal dominant disorder [1]. Neurofibroma can be of three subtypes, localized, diffuse and plexiform [2, 3].

Approximately 5-10% of plexiform neurofibroma under go malignant transformation, and their rate of growth is inversely proportional to age. The growth of Plexiform Neurofibroma is usually ill-defined, and there is a risk of recurrence [3-8]. Here, we present a case of a plexiform neurofibroma of the base of the tongue.

II. Case Report

An eighteen-years-old man presented to our department with a history of a slowly growing painless mass involving the tongue which was present for two years. Oral cavity examination revealed a pinkish red swelling with an irregular surface involving the right side of the mobile tongue. The swelling, which was evident on inspection, was approximatively 4x5 cm in size and was soft, nonreducible and nonpulsatile on palpation.

Complete blood count was normal. Magnetic resonance imaging (MRI) showed a hypervascularized mass in the tongue which was consistent (figure 1). Histopathological examination of the biopsy revealed lesional tissue composed of delicate spindle cells with thin wavy nuclei along with fine collagen fibrils (figure 2). Myxoid and cellular areas were seen. The patient underwent surgical removal of the mass under general anesthesia which was non-encapsulated and infiltrating deep into the intrinsic tongue muscles with a poor cleavage plane between the lesion and these muscles (figure 3).

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Neither a cranial nerve trunk nor a main vascular structure was seen in the surgical field. The postoperative period was uneventful. The motor functions and sensation of the tongue were normal as well.

The patient was evaluated clinically for features of the syndrome. Multiple café au lait macules were subsequently discovered on his trunk, the patient was referred to a cancer center for further management and follow-up.

III. Discussion

Neurofibromas of the large nerves, which appear clinically as soft, drooping and doughy masses, are benign tumors composed of neurites, Schwann's cells, and fibroblasts within a collagenous or myxoid matrix [9,10]. In contrast to shcwannomas, they are nonencapsulated and engulf the nerve of origin. Plexiformneurofibromas, forming tortuous cords along the segments and branches of a nerve with a tendency to grow centripetally, are poorly circumscribed tumors [10]. This tumor is said to be indicative of VRD even though it may be the only manifestation of the disease (11, 12).

Neurofibromas, usually associated with VRD, are generally encountered as multiple lesions, and rarely occur as a solitary tumor [2].

Differential diagnosis of such a tongue mass must include neurofibroma, schwannoma (neurilemoma), lymphangioma, hemangioma, hamartoma, teratoma, pyogenic granuloma, nerve sheath myxoma, and cystic lesions such as mucoid cysts and dermoid cysts.

The standard treatment for neurofibromas has been surgical excision and the diagnosis can only be confirmed by histological examination. Neurofibromas have extensive vascularity and tend to bleed during surgery. Therefore, excessive bleeding should be kept in mind while attempting surgical removal [3]. Early diagnosis in such a patient is very important and these patients need regular follow-up during their lifetime to detect recurrences. Fortunately, there were no signs of recurrence or other manifestationsduring the follow-up period of our patient untill that date.

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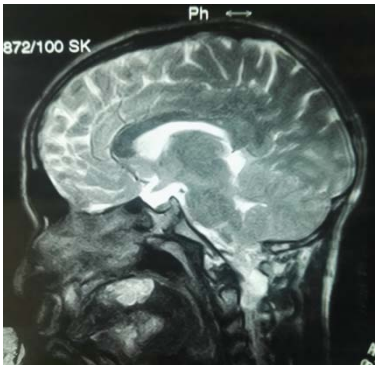

Figure 1: Preoperative-contrast T1-weighted magnetic resonance images of the patient

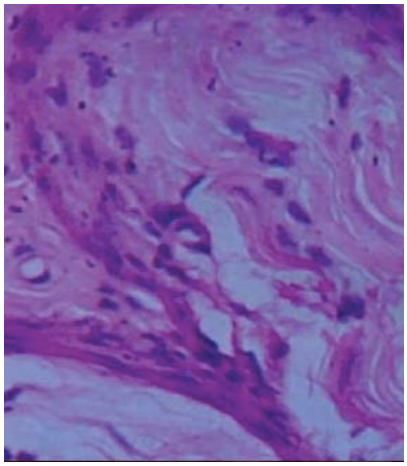

Figure 2: Showing histopathology picture of tissue taken

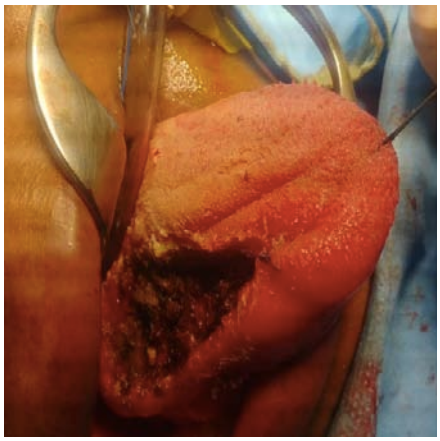

Figure 3: Image of the tongue after surgical excision

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Surgical Management of Infected Radicular Cyst using PRF and Graft Augmentation

By Dr. G. Srutha keerthi, Dr. P. Manasa, Dr. V. Priyanka & Dr. V. Prashanth

Abstract- The radicular cyst is one of the most commonly occurring cysts in the oral cavity. It is usually preceded by trauma or an infection which is followed by enlargement. In recent times there are several treatment procedures that are being applied to improve the postoperative condition and to accelerate the process of healing and regeneration in the affected site. A 30-year-old patient reported to our OPD with the chief complaint of swelling on the left side of the face since 2-3 months, on investigation a diagnosis of radicular cyst was given, which was initially treated by endodontic treatment of the involved tooth followed by enucleation of the cyst and apicoectomy. PRF and G bone graft- hydroxyapatite crystals were placed for aesthetic rehabilitation with 21.

Keywords: bone graft, PRF, radicular cyst.

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Surgical Management of Infected Radicular Cyst using PRF and Graft Augmentation

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Keywords: bone graft, PRF, radicular cyst.

I. Introduction

Cyst is a pathological cavity that may be filled with fluid, semi-fluid or gaseous contents, but never pus and it may or may not lined by epithelium. They are broadly classified into odontogenic and nonodontogenic origin with may be inflammatory or non-inflammatory. Odontogenic cysts are those which arise from the epithelium associated with the development of teeth. The source of epithelium is from the reduced enamel epithelium, enamel organ and the remnants of the dental lamina [1].

Radicular cysts or periapical cysts or lateral periodontal cysts are the most common inflammatory origin odontogenic cystic lesions of the oral cavity. They are most commonly found at the root apices of the pathologically affected teeth and there is no gender predilection [2].

II. Case Report

A 30-year-old male patient reported to the outpatient department of Dental Surgery with the chief complaint of pain and gradually increasing intraoral swelling since one month. There was a history of trauma to the upper anterior teeth before five years. He consulted a dentist and was advised to undergo treatment, but he refused to get it done. Before a month, he noticed a palatal swelling near upper right anterior tooth region. Initially, the swelling was smaller in size later it gradually increased since four days with continuous mild pain in the upper right anterior region.

Intraoral clinical examination revealed an oval swelling located over right palate crossing the midline from 11 to 14 regions. On palpation, the lesion was around 2.5cm × 3.5cm, soft in consistency, and tender, pus discharge was evident. There was no change in color of the mucosa overlying the swelling. Based on history and clinical findings a provisional diagnosis of the infected periapical cyst was given.

The intraoral periapical radiograph and orthopantomogram presented an oval shape large periapical radiolucency about 4.5cm × 5.5cm associated with 11 and 12 extending till 14. The computed tomographic images revealed a large lesion involving 11-14 tooth regions with a labial plate and palatal plate perforation. On aspiration with a sterile syringe needle, straw colored fluid with blood was obtained.

A final diagnosis of the infected periapical cyst was given based on history, clinical and radiographic findings. The treatment plan included cyst enucleation followed by autologous PRF placement with GF graft under local anesthesia with root canal treatment in 11, 12. There was no significant medical history that influenced the procedure and prognosis. Root canal opening was done in all affected teeth before the surgical procedure.

Surgical enucleation, followed by placement of autologous PRF as a surgical adjuvant, was planned under local anesthesia. For the preparation of PRF, 5 ml of whole venous blood was collected in two sterile Vacutainer tubes without adding anticoagulant. The Vacutainer tubes were then centrifuged for 10 min at the speed of 3000 rpm. The cystic site was exposed through the intraoral approach and, the cystic lining was enucleated. For enucleation, nerve blocks were administered with 2% Local anesthesia with adrenaline (1:200000) Crevicular incision was given and the labial full thickness mucoperiosteal flap was elevated to expose the area of the lesion. The expansion of the existing cortical bone window was done and, underlying pathology was exposed and, space was made for curettage. PRF, G bone graft hydroxyapatite crystals were placed in the defect. Hemostasis was achieved and, primary closure was done using sutures.

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Postoperative instructions were given and medication was prescribed to the patient. The excised cystic mass was sent for the histopathological examination.

Histopathological features were suggestive of a clinical diagnosis of an infected radicular cyst. Suture removal was done after a week and a palatal plate was given .The patient was kept under regular clinical and radiographic follow-up. After one month of follow-up, oral and radiological examination revealed healing wound and reduction in the size of radiolucency.

Fig. 1: Front profile of patient

Fig. 2: Palatal swelling

Fig. 3: IOPA showing ill defined radiolucency

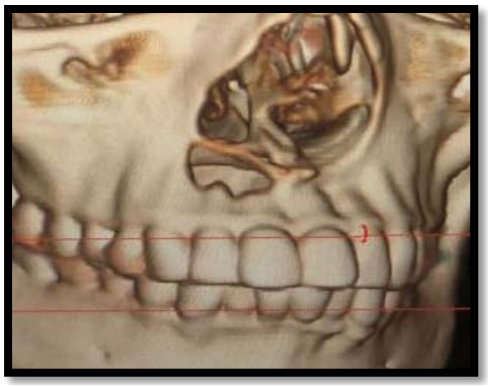

Fig. 4: CT image showing labial perforation

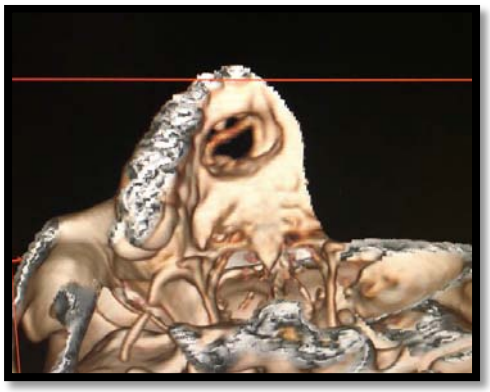

Fig 5.: CT image showing palatal perforation

Fig. 6: Showing PRF and graft

Fig. 7: Showing labial perforation

Fig. 8: PRF filled in the labial defect

Fig. 9: Showing graft filled into defect

Fig. 10: Primary closure

Fig. 11: Retainer placed palatally

Fig. 12: Post operative image of palate

III. Discussion

Radicular cysts are the most common odontogenic cyst affecting maxilla arises as a consequence of inflammation from epithelial residues in the periodontal ligament. The pathogenesis of cyst starts with initiation which gradually progresses to cyst formation, then enlarges to involve the adjacent bone and other surrounding vital structures in its surrounding. [3]. There are several treatment options to treat the cyst such as endodontic treatment followed by enulecation and marsupialization [4].

Regeneration and Repair (In a study by Ross, Platelets have regenerative potential) are the two main factors for post-surgical process [5]. Regeneration has been defined as the reproduction or reconstitution of a lost or injured part to restore the architecture and function of the periodontium [6].

Platelet-rich fibrin (PRF), a fibrin matrix in which platelet cytokines, growth factors, and cells are trapped, released after some time and serve as a resorbable membrane has been a new paradigm shift in the platelet gel therapeutic concept. Autologous PRF is considered to be a biomaterial which aids in healing. Present studies have shown its application in various treatment modalities of dentistry.PRF has several advantages such as it does not require any biochemical handling of blood and also economical. PRF also has a supportive effect on the immune system [7, 8].

Several types of bone grafts are used such as autogenous graft, allogeneic graft, alloplastic graft, and xenogeneic graft. Bone grafts alone without a blood clot or angiogenic factors are unlikely to promote sufficient periapical wound healing. PRF can be used in conjunction with bone grafts in the form of a platelet gel [3]. Besides promoting wound healing, bone growth & maturation, PRF with bone graft has advantages of graft stabilization, wound healing, hemostasis and improved handling properties [6]. The application of autologous platelet-rich fibrin along with bone graft present new possibilities for enhanced healing and functional recovery. It could be effective and economical than any other available regenerative materials.

IV. Conclusion

Various treatment options have been suggested depending on the size and location of the cyst. While in large lesions endodontic treatment is followed by surgical enucleation; however some authors prefer nonsurgical management of smaller lesions. This case report presents a new surgical approach using PRF and bone graft for management of large cyst along with endodontic treatment.

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Unusually Placed Supernumerary Teeth: A Case Report

By Dr. Jyoti Sharma, Dr. Bhagwat Swaroop Sharma, Dr. Manisha Upadhyay,
Dr. Nilotpol Kashyap, Dr. Updesh Masih & Dr. Shashi Prabha Yadav

Abstract- Supernumerary teeth (hyperdontia) can be defined as any tooth or teeth like substance in excess of the normal number of deciduous or permanent teeth which can cause ectopic and delayed eruption of the permanent teeth, which can further alter the occlusion and appearance of the child. It is has been found as per the different studies that supernumerary teeth in females (1.28%) are more prevalent than in males (1.0%). This case report describes the multidisciplinary management of two impacted supernumerary teeth, which prevented the eruption of the maxillary left central incisor (21) in case 1 and another case describes buccally erupted 11 due to the presence of retained deciduous teeth and palatally placed supernumerary teeth. Surgical removal of the supernumerary teeth was done in both the cases.

Keywords: *supernumerary teeth, SLOB technique, mesiodens.*

GJMR-J Classification: *NLMC Code: WU 300*

Unusually Placed Supernumerary Teeth: A Case Report

Dr. Jyoti Sharma [α], Dr. Bhagwat Swaroop Sharma [σ], Dr. Manisha Upadhyay [ρ], Dr. Nilotpol Kashyap [ω], Dr. Updesh Masih [¥] & Dr. Shashi Prabha Yadav [§]

Abstract- **Supernumerary teeth (hyperdontia) can be defined as any tooth or teeth like substance in excess of the normal number of deciduous or permanent teeth which can cause ectopic and delayed eruption of the permanent teeth, which can further alter the occlusion and appearance of the child. It is has been found as per the different studies that supernumerary teeth in females (1.28%) are more prevalent than in males (1.0%). This case report describes the multidisciplinary management of two impacted supernumerary teeth, which prevented the eruption of the maxillary left central incisor (21) in case 1 and another case describes buccally erupted 11 due to the presence of retained deciduous teeth and palatally placed supernumerary teeth. Surgical removal of the supernumerary teeth was done in both the cases.**

Keywords: supernumerary teeth, SLOB technique, mesiodens.

I. Introduction

The supernumerary teeth (hyperdontia) can be defined as any teeth or tooth like substance in excess of the normal number of deciduous or permanent teeth[1].

Although the exact aetiology remains unclear, various theories were proposed which include atavism (evolutionary throw back), hyperactivity of the dental lamina, dichotomy of the tooth germ and other genetic factors. More recently, a multifactorial aetiology has been suggested[2].

Classification of supernumerary teeth may be on the basis of position or form. Positional variations include mesiodens, paramolars, distomolars and parapremolars. Variations in form consist of conical types, tuberculate types, supplemental teeth and odontomes. Supernumerary teeth may, therefore, vary from a simple odontome, through a conical or tuberculate tooth to a supplemental tooth which closely resembles a normal tooth. Also, the site and number of supernumeraries can vary greatly. It is most frequently found in males than females in the proportion of 2:1[3].

The most common type of supernumerary tooth as indicated by Alberti is mesiodens. The term mesiodens was coined by Balk in 1917 to denote a supernumerary tooth located mesial to both central incisor appearing as peg-shaped crown in normal or inverted position. A mesiodens has an overall prevalence of 0.15–1.9%[4-7]. Mesiodens account for 80% of all supernumerary teeth. It can occur individually or as multiples, may appear unilaterally or bilaterally, and often remain unerupted[8].

Supernumerary teeth, especially in anterior region of maxilla, can cause eruption failure, displacement and rotation of the permanent teeth[9]. In general these remain impacted and asymptomatic and are commonly discovered during routine radiographic examination.

When any of the above complication occurs or is anticipated, surgical removal of the supernumerary tooth is indicated. These case reports presents a cases of a non-syndromic patient with presence of an impacted, supernumerary teeth which was detected during routine radiographic examination and its surgical removal was planned.

II. Case Reports

Case 1

An 11 year old male patient reported to the department of Pedodontics and Preventive Dentistry with a chief complaint of a missing maxillary right central incisor (11). The patient had no history of dental trauma. The intraoral examination showed absence of 11 (Figure 1a) and decayed 75, 85. Intra-oral periapical radiograph and OPG (Figure 1b, 1c) was advised which revealed the presence two supernumerary teeth in relation to 11, 12 which was hindering in the eruption of 11.

Figure 1a

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Figure 1b

Figure 1c

On the basis of the above findings, diagnosis of non-syndromic supernumerary teeth was made and surgical removal of the supernumerary teeth was planned along with extraction of 75, 85.

Under local anesthesia full thickness flap was raised. After elevation of the flap, 1/3rd crown of supernumerary teeth in relation to 11 was visible and thus was extracted, but adequate amount of bone was removed from the buccal side in relation to 21 using slow speed hand piece with surgical round bur (No. 8) with copious saline irrigation to expose the impacted conical shaped supernumerary tooth (Figure 1d).

Figure 1d

The margin of the bone was smoothened with a bone file. The buccal mucoperiosteal flap was repositioned and sutured with 3-0 black braided silk (Mersilk, Ethicon, Inc., Johnson & Johnson company, USA). Sutures were removed after one week and the healing was uneventful. Extraction was done of 75 followed by 85 after one week of interval.

Case 2

An 8 year old female patient reported to the department of Pedodontics and Preventive dentistry with a chief complaint of irregularly placed 11. The intraoral examination showed buccally placed 11 with palatally placed retained deciduous 51 (Figure 2a).

Figure 2a

Intra-oral periapical radiograph was advised in relation to 11, 21 which revealed the presence supernumerary tooth in relation to 21 and retained deciduous 51(Figure 2b).

Figure 2b

With the help of SLOB (same side lingual and opposite side buccal) technique, the position of supernumerary tooth was found to be palatally placed. On the basis of the above findings, diagnosis of non-syndromic supernumerary teeth was made and surgical removal of the supernumerary teeth was planned along with extraction of 51. Under local anesthesia full thickness flap from plalatal aspects was raised. After elevation of the flap, supernumerary tooth was visible and thus was extracted along with 51. (Figure: 2c)

Figure 2c

The palatal mucoperiosteal flap was repositioned and sutured with 3-0 black braided silk (Mersilk, Ethicon, Inc., Johnson & Johnson company, USA). Sutures were removed after one week and the healing was uneventful.

III. Discussion

Any delayed, ectopic or asymmetric eruption of maxillary permanent central incisors should alert the clinician to the possibility of an impacted supernumerary tooth and requirement of careful monitoring of the case. The presence, position and relation of supernumerary teeth to the adjacent teeth, and the distance of the impacted permanent tooth from occlusal plane should be evaluated on the radiographic basis. An early recognition of the supernumerary teeth is essential for determining the appropriate treatment for each patient[10].

It has been stated that only 25% of maxillary anterior supernumerary tooth erupts spontaneously into the oral cavity[11]. Unerupted supernumerary tooth may lead to some potential problems which include disturbed tooth eruption, tooth rotation, bodily displacement, crowding, spacing, or diastema of normal teeth. A cystic alteration was reported in 4–9% of the supernumerary cases, with the anterior maxilla being affected in 90%[5,11]. Therefore, these potential detrimental effects in young children make it mandatory to extract unerupted supernumerary teeth.

The exact aetiology of supernumerary teeth is still obscure although many theories have been proposed. Two popularly accepted theories are[10]:

1. The dichotomy theory of tooth germs states that the tooth bud splits into two equal or different sized parts, resulting in two teeth of equal size or one normal and one dismorphic tooth, respectively. This hypothesis is supported by animal experiments in which split germs have been cultivated in vitro.
2. Localised and independent hyperactivity of dental lamina is the other accepted theory, which suggests supernumerary teeth are formed as a result of local, independent, conditioned hyperactivity of dental lamina.

In the present cases, surgical extraction of supernumerary teeth was made as soon as it was diagnosed, without any damage to adjacent teeth. Patient was monitored at regular intervals for further follow ups.

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Ceruminous Adenocarcinoma of External Auditory Canal: A Very Rare Case of Malignant Tumor of the Temporal Bone

By Omar Iziki, Mohamed Laachoubi, Sami Rouadi, Redallahlarbi Abada, Mohamed Roubal & Mohamed Mahtar

King Hassan II University

Abstract- Ceruminous adenocarcinoma of the external auditory canal is a rare malignant tumor originating from the ceruminous gland. Most commonly, presenting with a mass or pain in the outer ear canal of middle-aged patients, but it displays no specific clinical symptoms or signs. With only a few reports documented in the literature, we are presenting a new case of a 37 years old man presented with an advanced malignant ceruminous gland tumor.

GJMR-J Classification: *NLMC Code: WV 140*

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Ceruminous Adenocarcinoma of External Auditory Canal: A Very Rare Case of Malignant Tumor of the Temporal Bone

Omar Iziki [α], Mohamed Laachoubi [σ], Sami Rouadi [ρ], Redallahlarbi Abada [ω], Mohamed Roubal [¥] & Mohamed Mahtar [§]

Abstract- Ceruminous adenocarcinoma of the external auditory canal is a rare malignant tumor originating from the ceruminous gland. Most commonly, presenting with a mass or pain in the outer ear canal of middle-aged patients, but it displays no specific clinical symptoms or signs. With only a few reports documented in the literature, we are presenting a new case of a 37 years old man presented with an advanced malignant ceruminous gland tumor.

I. Introduction

Ceruminous glands are specialized apocrine glands located in the cartilaginous part of the external auditory canal (EAC). Primary malignant tumors arising from these glands are infrequent, and they may present a diagnostic dilemma because of their varied clinical and histological manifestations. Here we report a patient with an extended ceruminous adenocarcinoma. This article highlights the importance of early diagnosis for optimal management of this pathology.

II. Case Report

A 37 years old man, without a history of diabetes mellitus or immunesupression, presented to our head and neck department with one (01) year history of left purulent otorrhea with the decreased hearing of the left ear and facial paralysis without vertigo. He denied experiencing dizziness, tinnitus, vertigo or earache.

On physical examination, there was a retro-auricular fistula with local inflammatory signs. Otoscopy showed a large polyp on the cartilaginous part of the left EAC, with mucopurulent discharge in the EAC. The tympanic membrane was not visible. Audiometry revealed conductive hearing loss on the left. The 4-frequency pure tone average was 50 dB for air conduction and 10 dB for bone conduction. We didn't note any palpable cervical lymph nodes.

A Computed Tomography scan of the temporal bone showed the presence of a mass in the left EAC and middle ear with lytic lesions of the facial canal nerve, carotid canal and EAC (figure 1).

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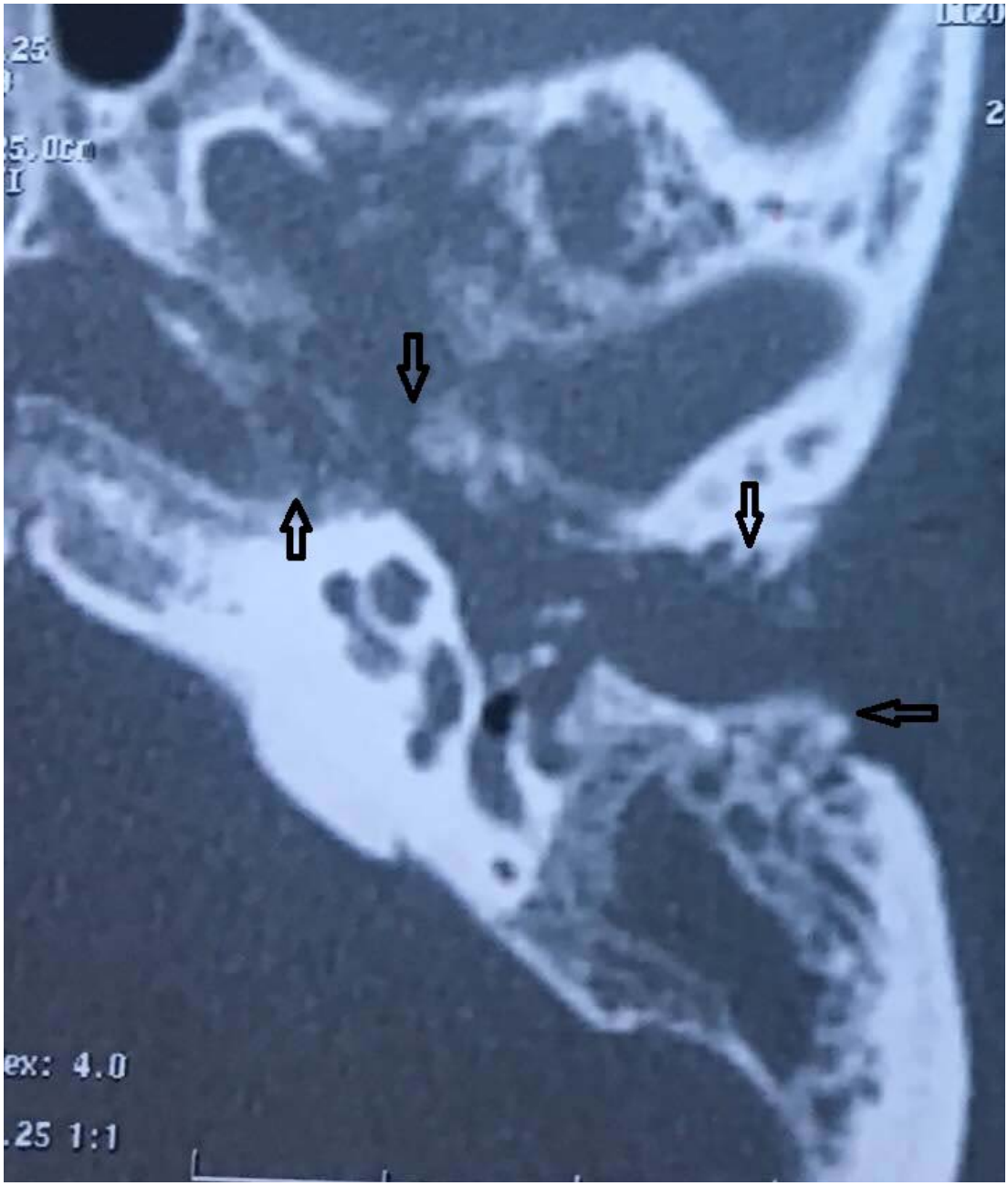

Figure 1: CT scan showing the collection in the left EAC, with osteolysis and osteitis of the temporal bone (Arrows).

Using retro-auricular approach, the mass of the EAC was removed (figure3), and histological analysis showed a poorly differentiated carcinomatous proliferation primarily suggestive of a neuroendocrine tumor. We completed with immunohistochemistry that showed an intense and diffuse positivity of cytokeratin 7 and CD117. The final diagnosis was ceruminous adenocarcinomas.

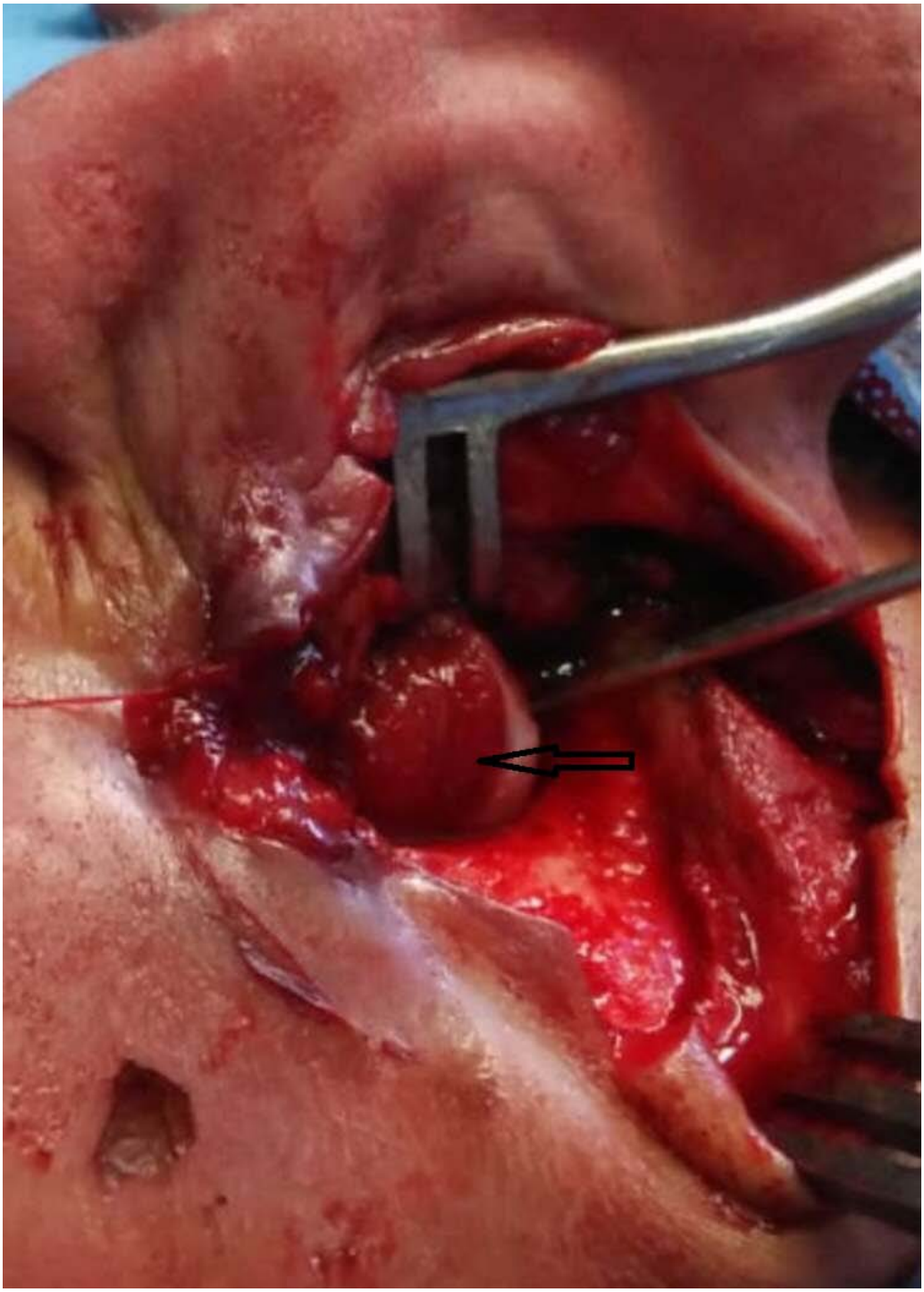

Figure 2: Per-operative view showing the tumor arising fronEAC (Arrow).

Because of the extension of the mass, the decision was to propose for intensity-modulated radiotherapy; he received a total of 60 Gy.

III. Discussion

Ceruminous adenocarcinomas are a rare malignant tumor that arises from the ceruminous gland found in the cartilaginous part of EAC. It is the 2nd most common type of carcinoma arising from ceruminous-glands [1]. Most affected patients are in their fifth or sixth decades of life and average age at diagnosis of 48 years. Its incidence is equal between males and females [1, 2]. There are no known risk factors for the development of these tumors, although the otitis externawas implicated in animal models [2]. Ceruminous adenocarcinoma exhibits a prolonged subclinical phase, often lasting years, before presentation [3].

The most common symptoms reported in the literature are: mass of the EAC, hearing changes, otorrhea, bleeding, headaches, equilibrium changes, pain and facial paralysis, and less frequently lymphadenopathy or tinnitus. Although cervical lymph node metastasis is uncommon, distant metastasis to the bones, lungs, and brain have been described [4].

Imaging plays important role in predicting and delineating the EAC tumor extent. Axial and coronal Computed tomographic scans help in detecting bony erosion and disease extension as well as in excluding a primary parotid or middle ear tumor [3].

Histologically, ceruminous adenocarcinoma is classified as high-grade and low-grade tumors based on the extent of glandular differentiation and the proportion of solid areas [6, 8]. Low-grade tumors may mimic the histopathologic features of the benign ceruminous adenomas but are distinguished from the latter by the presence of stromal invasion and a desmoplastic stromal response. High-grade adenocarcinomas extensively infiltrate the surrounding tissues as irregular glands, cords, and sheets of overtly malignant cells. You marked nuclear pleomorphism and abundant mitotic figures. High-grade tumors may exhibit minimal or no evidence of apocrine derivation and needs to be distinguished from metastatic adenocarcinoma originating from other sites [6].

The mainstay of management of this tumor is combined surgery and radiotherapy. Radiotherapy has a limited role in treatment as a conjunctive therapy with surgery and in cases of distant metastasis. As a surgical procedure, Hicks has proposed initial en bloc surgical resection. And then, if tumor have an extension to the middle ear, resection of the temporal bone and adjacent structures is necessary [4, 7]. In our case, there is a tumor extension to the carotid canal, complete resection was impossible. Surgical margin positivity at initial surgery, bone extension, perineural invasion, and local recurrence seem to be prognostic factors for cases in the literature. Chemotherapy did not prevent the development of distant metastasis. Prognosis may be difficult to predict, 25% of patients with ceruminous adenocarcinoma died of disease a mean of 2 years after presentation. The disease-specific mortality is 35% [8].

IV. Conclusion

Ceruminous adenocarcinoma is a rare malignant subtype of ceruminous gland neoplasm; its diagnosis is most often challenging, comprehensive evaluation including physical examination, multimodal imaging studies and thorough histologic analysis of an adequate biopsy that includes surrounding tissue is necessary to arrive at the correct diagnosis. Prognosis may be difficult to predict but complete surgical excision coupled with radiation yields the best long-term prognosis.

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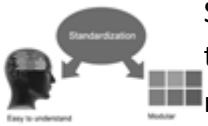

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Title

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.

The Administration Rules

Administration Rules to Be Strictly Followed before Submitting Your Research Paper to Global Journals Inc.

Please read the following rules and regulations carefully before submitting your research paper to Global Journals Inc. to avoid rejection.

Segment draft and final research paper: You have to strictly follow the template of a research paper, failing which your paper may get rejected. You are expected to write each part of the paper wholly on your own. The peer reviewers need to identify your own perspective of the concepts in your own terms. Please do not extract straight from any other source, and do not rephrase someone else's analysis. Do not allow anyone else to proofread your manuscript.

Written material: You may discuss this with your guides and key sources. Do not copy anyone else's paper, even if this is only imitation, otherwise it will be rejected on the grounds of plagiarism, which is illegal. Various methods to avoid plagiarism are strictly applied by us to every paper, and, if found guilty, you may be blacklisted, which could affect your career adversely. To guard yourself and others from possible illegal use, please do not permit anyone to use or even read your paper and file.

Criterion for Grading a Research Paper (Compilation) by Global Journals

Please note that following table is only a Grading of "Paper Compilation" and not on "Performed/Stated Research" whose grading solely depends on Individual Assigned Peer Reviewer and Editorial Board Member. These can be available only on request and after decision of Paper. This report will be the property of Global Journals.

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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Global Journal of Medical Research

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