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Case report

A Rare Case of Superficial Temporal Space Abscess Arising from Lower Wisdom Tooth

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ABSTRACT

A superficial temporal space infection is a secondary infection that originate from the spread of infection from another facial space. It is located between the temporal fascia and Temporalis muscle and extends superiorly to the zygomatic arch and laterally to the lateral orbital rim; Submessetric space is considered the bottom of the superficial temporal space. An hourglass appearance is seen in the case of infection of the STS and submessetric space due to tight attachment of the temporal fascia and Zygomatic arch. A 31 years old healthy man, how had given different type of antibiotic over 20 days, came with moderate swelling in the submessetric space area with slight skin due to chronic fistula in this area and huge painless swelling in the temporal region left with sight deviation of the external helix. Ultrasound examination showed us a large amount of pus in the superficial space and only a small amount of pus in the submessetric space, as well as significant lymphadenopathy in the right submandibular lymph nodes. Surgical incision and drainage for abscess is carryout through Gillis approach extra-oral and intra-oral incision in buccal vestibule is carryout to reach submessetric abscess. On conclusion, a superficial temporal space infection is one of these facial space abscesses that need appropriate treatment. Proper antibiotic cover and re-evaluation of the patient is necessary in cellulitis stage, but surgical incision and drainage is mandatory in the abscess stage.

Keywords: Superficial Temporal Space, Odontogenic Infection, Drainage.

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عدوى الفضاء الصدغي السطحي هي عدوى ثانوية تنشأ من انتشار العدوى من مساحة أخرى في الوجه. وهي تقع بين اللفافة الصدغية والعضلة الصدغية وتمتد بشكل علوي إلى القوس الوجني وأفقياً إلى الحافة المدارية الجانبية. يعتبر الفضاء تحت الطبقة بمثابة الجزء السفلي من الفضاء الزمني السطحي. يُرى مظهر الساعة الرملية في حالة إصابة STS والفضاء تحت المنتصف بسبب الارتباط الوثيق بين اللفافة الصدغية والقوس الوجني. رجل سليم يبلغ من العمر 31 سنة، أعطى نوعاً مختلفاً من المضادات الحيوية على مدار 20 يوماً، جاء مع تورم متوسط في منطقة الحيز تحت الرحم مع جلد خفيف بسبب ناسور مزمن في هذه المنطقة وتورم كبير غير مؤلم في المنطقة الزمنية مع انحراف البصر- الحلزون الخارجي. أظهر لنا الفحص بالموجات فوق الصوتية وجود كمية كبيرة من القيح في المساحة السطحية وكمية صغيرة فقط من القيح في المساحة تحت الفك السفلي، بالإضافة إلى تضخم عقد لمفية كبير في العقد الليمفاوية تحت الفك السفلي اليمنى. يتم إجراء الشق الجراحي وتصريف الخراج من خلال طريقة جيليس، ويتم إجراء شق خارج الفم وداخل الفم في الدهليز الشدق للوصول إلى الخراج تحت المبيض. في الختام، إن التهاب الفضاء الصدغي السطحي هو أحد خراجات الفضاء الوجهي التي تحتاج إلى علاج مناسب. إن التغطية بالمضادات الحيوية المناسبة وإعادة تقييم المريض أمر ضروري في مرحلة التهاب النسيج الخلوي، ولكن الشق الجراحي والتصريف إلزامي في مرحلة الخراج.

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INTRODUCTION

A superficial temporal space (STS) infection is a secondary infection that originate from the spread of infection from another facial space. 1 it is located between the temporal fascia and Temporalis muscle and extends superiorly to the zygomatic arch and laterally to the lateral orbital rim [1,2]. Submessetric space is considered the bottom of the superficial temporal space. An hourglass appearance is seen in the case of infection of the STS and submessetric space due to tight attachment of the temporal fascia and Zygomatic arch [1,3].

Management of facial space infection considers complicate procedures, which need urgent intervention otherwise the infection can progress to life-threatening conditions such as airway obstructions, cavernous sinus thrombosis, Ludwig's angina, and mediastinitis [4-6].

We present a case of superficial temporal space infection secondary to submessetric space infection due to a periapical abscess of a lower 3rd molar on the right side.

Case report

A 31 years old healthy man came to our clinic with massive swelling in the temporal and check right side for 20 days ago. The swelling started in the submessetric area right, arising from periapical abscess in the lower wisdom tooth right (Figure 1).

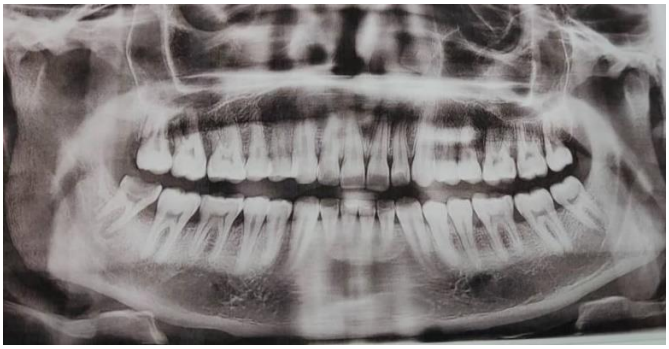

Figure 1. Panorama x-ray shows us periapical abscess of lower wisdom tooth right.

The general practitioner dentist gave him a different type of antibiotic (Augmentin 1g tablet twice daily for seven days, then changed to by Rocephine 1g intravenous twice daily for seven days too, but he did not respond to treatment, one week later the infection spread to the superficial temporal space (Figure 2).

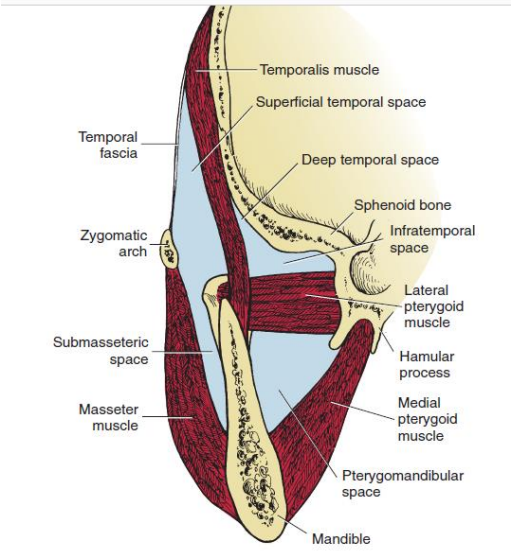

Figure 2 a- preoperative photo shows us hour glass appearance with deviation of the ear helix; 2 b- Diagram shows us the borders of the STS and relation to Zygomatic arch.

In clinical examination, there was moderate swelling in the submessetric space area with slight skin due to chronic fistula in this area and huge painless swelling in the temporal region left with sight deviation of the external helix; the maximum mouth opening was 11mm.

Ultrasound examination showed us a large amount of pus in the superficial space and only a small amount of pus in the submessetric space, as well as

significant lymphadenopathy in the right submandibular lymph nodes.

On blood investigation, C-reactive protein was 360 mg/liter the other blood test was within normal limits, blood hemoglobin 12.6 g/dL, and white blood cells were 10,47 per cubic millimeter.

Incision and drainage are carried out under general anesthesia, Gilles approach is used in the temporal area. In addition to the Gilles approach, intraoral approach at the most distal point in the buccal vestibule is necessary to open the submessetric abscess (Figure 3 & 4).

Figure 3 Incision in the Temporal area

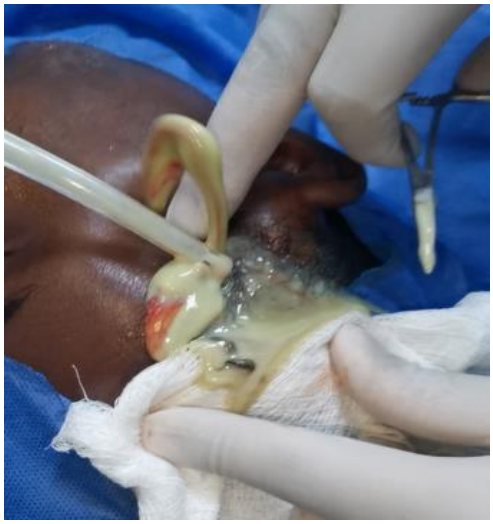

Figure 4 Evacuation of the pus from the STS

After irrigation with hydrogen peroxide and betadine and the insertion of drainage, a crepe bandage is used to prevent the collection of hematoma bandages the temporal area with pressure. A swab is taken shows no growth; 1 gram of Meropenem is given twice daily for seven days, with daily dressings, and was continued for 10 days' post-operatively. After almost two weeks, the patient returned to his normal life and was symptom free.

DISCUSSION

The temporal space infection is a rare type of space infection with an incidence of 0.47% et al 1; thus, it is inadequately reported in the literature. TS infection is secondary space, origin by odontogenic cause or none odontogenic cause; the most common odontogenic cause is infection arising from maxillary molars followed by mandibular molars, whereas the none odontogenic cause results from maxillary sinusitis and maxillary sinus fractures [7].

The Temporalis muscle divides temporal space into superficial temporal space and deep temporal space, submessetric space considers the bottom of the superficial one, while ptrygommandibular space considers the bottom of the deep one, et al., [1,9].

A combination of extra oral and intra oral incision were reported by four authors [2,4,6,8]. Whereas Narayan ML et al [3] used only incisions in the temporal region to treat a temporal abscess as the masticatory space is communicated together. Xavier TB et al [4] used two incisions in the temporal area, one in the superior border of temporal space and the other in the inferior border of TS (through and through).

Only Arrvinthan Suet et al [6] and Professor Naresh Kumar et al [7] used pressure bandages in the temporal area after ID to facilitate the draining of newly collected exudate and dead cells; in the present case, we have applied pressure bandages for the same purpose in addiction to prevent the collection of hematoma in the STS.

Different types of antibiotics are used in combination with surgical intervention; Razdan B et al5 and Narayana et al3 have given amoxicillin and Clavulanic acid, Morrision A et al [2] used Cefuroxime 500mg twice daily and Metronidazole

500mg twice daily due to suspected bony involvement, in our case report Meropenem 1g IV was continued for one week twice daily.

CONCLUSION

Management of facial space infection is considered complicated procedure whether the cause is odontogenic or none odontogenic. According to our case report, superficial temporal space infection is one of these facial space abscesses that need appropriate treatment. Proper antibiotic cover and re-evaluation of the patient is necessary in cellulitis stage, but surgical incision and drainage is mandatory in the abscess stage.

REFERENCE

1- Peterson's Principles of Oral and Maxillofacial Surgery, second edition. 2004
2- Morrision A, Brady J. Temporal Space Abscess Secondary to Mandibular Dental Extraction. 2009;(C).
3- Lakshmi N, Gaur U, Chaithanya N, Sravani A. A Rare Case of Temporal and Infratemporal Space Abscess Secondary to Masseteric Space Infection', International Journal of Otorhinolaryngology and Head and Neck Surgery. 2020;6(2):384.
4- Xavier, Thiago Brito, Radamés Bezerra Melo, Yuri Edward, Souza Damasceno, Thais Da, Silva Fonseca, and others, 'Expression of Unsual Odontogenic Infection: Dissemination to Region Temporal'. 2017;19:83–86
5- Razdan P, Singh C, Kumar J, Patthi B, Malhi R, Singla A. Odontogenic Submandibular Space Infection Complicated by Temporal Space Abscess: Report of A Rare Case. International Healthcare Research Journal. 2017;7(1):10–13
6- Arrvinthan S, Bhanumurthy L, Samson J, Balasubramanian A. Retrograde Spread of Buccal Space Infection into Temporal Space with Temporal Muscle Necrosis in a Medically Compromised Patient - A Case Report. Journal of Evolution of Medical and Dental Sciences. 2021;10(37):3301-3305.
7- Mohd R, Kumar N. Temporal Space Infection Secondary to Mandibular Molar: A Rare Case Report. International Journal of Dental Science and Innovative Research (IJDSIR) 2021.
8- Probal C, Goyal I. Temporoparietal and Infratemporal Fossa Abscess as a Complication of Dental Extraction – a Rare and Potentially Lethal Condition. Asian J Med Sci. 2018;9(4):57–60.
9- Wasim A, Sivaroobini E. Space Infection – Review Article', European Jurnal of Molecular & Clinical Medicine, 2020;7(8):1732–35