OPEN ACCESS

Saudi Journal of Medicine

Abbreviated Key Title: Saudi J Med
ISSN 2518-3389 (Print) |ISSN 2518-3397 (Online)
Scholars Middle East Publishers, Dubai, United Arab Emirates
Journal homepage: https://saudijournals.com

Case Report

Pott's Puffy Tumor Complicating Frontal Sinusitis: About A Case

Mohamed Sahli*, Bouchaib Hemmaoui, Noureddine Errami, Fouad Benariba

Department of Head and Neck Surgery, Military Hospital Mohammed V, Rabat, Morocco

DOI: 10.36348/sjm.2021.v06i07.001 | **Received:** 24.05.2021 | **Accepted:** 29.06.2021 | **Published:** 03.07.2021

***Corresponding Author:** Mohamed Sahli

Abstract

Pott's puffy tumor is a relatively rare condition and mainly affects children and young adults. It is often secondary to frontal sinusitis with the potential of serious endocranial complications. We report the case of a young adult of 18 years treated for frontal sinusitis and in whom the evolution was marked by an erosion of the external table of the frontal sinus and the development of a subperiosteal abscess. The patient underwent emergency surgical exploration. The rapid diagnosis and the very early stage of our patient allowed us to perform a minimally invasive supra-eyebrow Lynch approach. Considering the risk of dangerous complications, the diagnosis of Pott's puffy tumor must be evoked in front of any inflammatory frontal swelling.

Keywords: Potts puffy tumor; Sinusitis; Osteomyelitis.

INTRODUCTION

Frontal sinusitis is considered the most frequently complicated sinusitis especially at the intracranial and orbital level. Pott's puffy tumor is one of the formidable complications, but its incidence remains relatively rare, it is defined as osteomyelitis of the frontal bone with subperiosteal abscess. With the widespread use of antibiotics nowadays, this complication has become rare, almost forgotten by practitioners. Early diagnosis and appropriate treatment are the keys to reducing its morbidity and mortality, as we report in our observation.

OBSERVATION

An 18-year-old patient consulted for swelling of the left frontal region and headache. Clinical examination found a left frontal mass which was painful on palpation and fluctuating, and left purulent rhinorrhea (Figure 1).

Fig-1: Front and side view showing the renitant swelling of the left frontal region

The patient was treated five days before admission with probabilistic antibiotic therapy with amoxicillin-clavulanic acid but without improvement. The biological assessment objectified the inflammatory syndrome with hyperleukocytosis, and a CRP at 53 mg / L. Computed tomography revealed a left frontal sinusitis complicated by a subperiosteal abscess related to a small osteolysis of the external table of the frontal sinus, in favor of frontal osteomyelitis or Pott's puffy tumor (Figure 2).

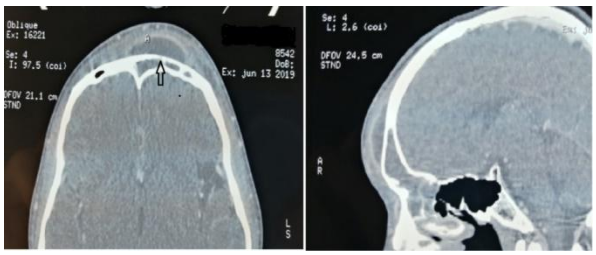

Fig-2: Computed tomography in axial and sagittal section: left frontal sinusitis with minor osteolysis of the external table of the frontal sinus (arrow) responsible for a subperiosteal abscess

The patient underwent emergency frontal sinus exploration under general anesthesia. A modified supra-eyebrow Lynch approach was performed on the left side allowing drainage of the sub-periosteal abscess and debridement of the infected bone. Bacteriological examination of the pus collected came back sterile. The patient received intravenous antibiotic therapy based on

ceftriaxone immediately after surgery. The postoperative follow-up was simple and an oral antibiotic therapy with amoxicillin-clavulanic acid was carried out a week later after his CRP was negativated. The follow-up of our patient in the sixth month did not show any recurrence, neither clinical nor radiological.

DISCUSSION

Pott's puffy tumor was first described in 1768 by Percival Pott [1, 2] as an osteomyelitis of the frontal sinus complicated by a subperiosteal abscess. Its nomenclature is sometimes confusing for patients who think it is a malignant disease; a term change was proposed by Jho and al to Pott's puffy "abscess" to accurately enhance comprehension between practitioners and patients [2]. This pathology remains relatively rare given the wide use of antibiotics, and it mainly affects children and exceptionally adults [3]. Its pathogenesis is based on a common venous vascularization between the sinus mucosa and the frontal bone; the infection can then spread directly or indirectly through septic emboli sometimes explaining the intact appearance of the frontal bone [1]. The anterior table of the frontal sinus is thinner than the posterior table and is more susceptible to abscess formation. Post-traumatic cases or secondary to an insect bite or acunpuncture have also been reported but remain extremely rare [1, 4, 5].

The diagnosis should be considered when there is a combination of swelling and pain in the frontal area. The presence of a focal deficit and other signs of intracranial hypertension should raise concerns about intracranial complications. Computed tomography remains the examination of choice by allowing a precise analysis of the bone structures, it can highlight small osteolytic lesions as in the case of our patient. The bacteriological examination returns sterile in about 50% of cases as was the case with our patient, this is explained by the sterilization of the infectious site by prior probabilistic antibiotic therapy [6], The most common microbial agents involved in Pott's puffy tumor are streptococci, staphylococci and anaerobes; these are responsible for the majority of intracranial complications [7].

Treatment is based on an endoscopic, external surgical drainage or a combination of routes, sequestrectomy, and debridement of the infected frontal bone and prolonged antibiotic therapy for at least 6 weeks [4, 8]. In our patient, a supra-eyebrow Lynch approach was performed due to the limited extent of the infectious process allowing both collection recess and curettage of the infected bone. This route is more aesthetic and with less morbidity on condition that you pay attention to the supratrochlear and supraorbital nerves. To do this, it is necessary to remain as medial to these nerves and being careful when exposing the mucoperiosteal flap.

CONCLUSION

Since the advent and widespread use of antibiotics we have seen fewer and fewer cases of Pott's puffy tumor. The diagnostic should be considered in front of any fluctuant swelling of the frontal area and it is often confirmed with computed tomography. Prompt medical and surgical treatments are the essential keys to avoid the risks of intracranial sequelae. We recommend a minimally invasive approach for any beginner form without intracranial extension and without significant bone lysis under the guise of a good antibiotic therapy.

REFERENCES

1. Raja, V., Low, C., Sastry, A., & Moriarty, B. (2007). Pott's puffy tumor following an insect bite. Journal of postgraduate medicine, 53(2), 114.
2. Jho, D. H., Young, M., Xu, C., & Richter, B. (2020). Pott's puffy abscess: Moniker change from historical misnomer of Pott's puffy tumor. Interdisciplinary Neurosurgery, 20, 100643.
3. Horáková, Z., Smilek, P., Gál, B., & Pažourková, M. (2019). Pott's puffy tumour in adult. Otolaryngology Case Reports, 11, 100106.
4. Clarós, P., Ahmed, H., & Clarós, A. (2016). À propos d'un cas de tumeur de Pott post-traumatique. Annales françaises d'Oto-rhino-laryngologie et de Pathologie Cervico-faciale, 133(2), 109-111.
5. Wu, C. T., Huang, J. L., Hsia, S. H., Lee, H. Y., & Lin, J. J. (2009). Pott's puffy tumor after acupuncture therapy. European journal of pediatrics, 168(9), 1147.
6. Miloundja, J., Bamba, J. S., Mouba, J. F., Ondo, T. E., Mwanyombet, L., Lawson, J. M. M., & N'zouba, L. (2011). Complications cranioencéphaliques des sinusites bactériennes chez l'enfant et l'adolescent: étude de huit cas vus à Libreville (Gabon). Cahiers d'études et de recherches francophones/Santé, 21(4), 215-220.
7. Guillén, A., Brell, M., Cardona, E., Claramunt, E., & Costa, J. (2001). Pott's puffy tumour: still not an eradicated entity. Child's Nervous System, 17(6), 359-362.
8. AlMoosa, Z. A., AlFawaz, T., & AlFawaz, F. (2016). Pott's puffy tumor due to Aspergillus fumigatus: A case report and review. International Journal of Pediatrics and Adolescent Medicine, 3(3), 128-131.