

Fusobacterium nucleatum: a rare cause of Pott's puffy tumour secondary to chronic frontal sinusitis

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BACKGROUND

- Pott's puffy tumour refers to a subperiosteal abscess usually secondary to frontal sinusitis (1)
- The most common infective agents are Streptococcus species, Haemophilus influenzae and Staphylococcus species (3,5)
- Fusobacterium nucleatum (F. nucleatum) is a Gram- negative anaerobic bacterium that is abundant in the oral cavity in both diseased and healthy individuals (2,4)
- It is frequently associated with periodontal disease (2,4) but has rarely been described to be a cause of frontal sinus disease

METHODS

A case report of F. nucleatum as the infective agent in chronic frontal sinusitis resulting in Pott's puffy tumour in an 89 year- old patient.

RESULTS

Case Summary

- 5-week history of left supraorbital pain and swelling
- No previous sinus surgery
- Examination showed significant supraorbital erythema and swelling

Modified Endoscopic Lothrop Procedure

- **Findings:** Frank pus in the left frontal sinus with significant osteitic changes in the right frontal sinus
- **Procedure:** Outside- in approach as described by Prof Harvey (6)
 - A full house FESS was performed bilaterally to skull base follow by upper septectomy
 - Mucosa was raised over frontal beak and a wide frontal drillout was done
- Bilateral inferior turbinates were harvested for mucosa graft used to reline the frontal recess
- Pus that was drained from the operation was sent for culture which was negative but 16s PCR came back with Fusobacterium nucleatum

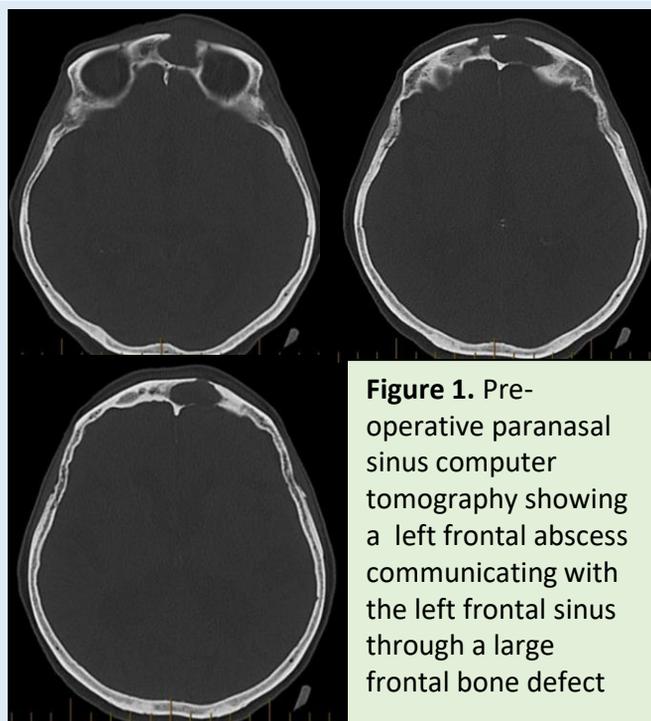


Figure 1. Pre-operative paranasal sinus computer tomography showing a left frontal abscess communicating with the left frontal sinus through a large frontal bone defect

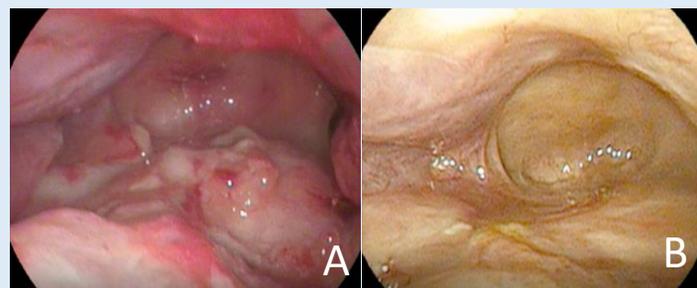


Figure 2. Endoscopic view of frontal sinus cavity at 4-week and 3- month follow up

Follow- up

- Discharged home on day 2 post- operation on Augmentin DF for 4 weeks
- Reviewed 4 weeks post operation with no evidence of recollection
- Nasoendoscopy was done at showing a widely patent frontal cavity with no evidence of residual infection (**Figure 2**)

CONCLUSION

Although rare, Fusobacterium can be an infective agent in chronic frontal sinusitis causing significant bony erosion leading to complication such as Pott's puffy tumour.

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