INTRODUCTION

Mucoceles are benign, epithelial-lined mucous cysts. Commonly, mucoceles form secondary to obstruction of a sinus outflow tract or from mucosal gland entrapment from chronic infection, inflammation, iatrogenic trauma, external trauma, or neoplasm. We present a rare case of a nasal mucocele in a 37-year-old male arising from a remote history of maxillofacial trauma. To our knowledge, mucoceles associated with nasal bone fractures have not been reported in the literature.

Patients with mucoceles frequently present due to complaints of frontal pressure, headaches, facial swelling, or visual disturbances. These symptoms correlate with the most common occurrence of mucoceles in the frontal and ethmoid sinuses. Mucosal entrapment or sinus outflow obstruction leads to the development of the locally expansile lesion. Increasing content of the mucocele will gradually alter the surrounding bony structures and has the potential for bony erosion. Here we describe a rare case of nasal mucocele associated with complex nasal bone and Le Fort II fractures.

DISCUSSION

The human nose is predisposed to soft-tissue injury and fracture due to its prominent position and delicate bony framework. The most common causes of facial fractures are assaults and motor vehicle accidents, followed by sports injuries and industrial accidents. Complications of nasal fractures can occur at the time of trauma but may also present in the post-injury setting. Early complications of nasal fractures include edema, ecchymosis, epistaxis, hematoma, infection, and CSF rhinorrhea. Delayed complications include airway obstruction, fibrosis, contracture, synchiae, saddle nose deformity, and septal perforation.

Mucoceles are epithelial-lined cavities filled with mucous. Mucoceles can occur as a secondary obstructive complication from chronic sinusitis and polyps. They may also occur as a result of trauma, surgery, or neoplasm. Mucoceles are most commonly due to iatrogenic trauma involving the paranasal sinuses. Serrano et al reported on a series of 60 patients with paranarial sinus mucoceles and found that 45% of patients had some form of prior nasal surgery, while only 2% sustained traumatic injuries. Mucoceles occurring as a complication of facial trauma are usually associated with frontal sinus fractures but less commonly with other facial fractures. Mucoceles occur most often in the frontal sinus, followed by ethmoid, maxillary, and sphenoid sinuses, respectively. Mucocele formation has also been reported following zygomaticomaxillary complex (ZMC) and orbital floor fractures, but is extremely rare.

Mucoceles associated with facial trauma form from the re-growth of viable sinus mucosa. This mucocele is ectopically seeded in a new location due to fracture displacement and becomes obstructed or entrapped. A mucocele filled cyst then develops and presents as a mass. These masses are usually slow-growing and are associated with various symptoms depending on the location and extent. Patients may complain of nasal obstruction, pain, visual changes, or recurrent infections. These cysts have the potential for bony erosion and subsequent extension to adjacent structures, including the paranasal sinuses, orbit, or brain.

Radiographic imaging is of central importance to the workup of mucoceles. A CT scan is the best modality and will often demonstrate a homogenous mass with or without surrounding bony changes. CT imaging also serves to delineate the extent of the mass. MRI is useful only for evaluation if intracranial or intraorbital extension is suspected. The treatment of mucoceles depends on the size and location. For smaller lesions, enucleation with complete removal of the cyst lining is recommended. For larger mucoceles, marsupialization may be completed if total extirpation is not possible.

CONCLUSIONS

This is the first reported case in the English-language literature of a mucocele occurring as a sequel to nasal bone fracture. There have been reports of ectopic mucocele entrapment leading to mucoceles in the orbit and pterygomaxillary space, but none secondary to complex nasal trauma. The otolaryngologist and maxillofacial surgeon should be aware of this very rare, but potential complication of nasal bone fractures.

REFERENCES