Removal of a BB from the Nasofrontal Outflow Tract Using a Urologic Basket

Allison K. Taraska, MD and Taha Z. Shipchandler, MD

Otolaryngology-Head and Neck Surgery, Indiana University School of Medicine, Indianapolis, IN

ABSTRACT

OBJECTIVES:
1) Describe a novel approach to BB removal from the nasofrontal outflow tract.
2) Present pre-, intra-, and postoperative photographs and imaging to illustrate surgical technique.
3) Discuss postoperative patient care considerations.
4) Review other techniques described for similar foreign bodies.

METHODS: Case report of patient receiving treatment in November 2012. The patient presented with a history of BB trauma to the forehead eight months prior. Imaging of the head revealed a BB lodged in the right nasofrontal outflow tract. Symptoms reported since the trauma included headache and facial pain.

RESULTS: This case resulted in successful removal of the BB using a Lynch incision approach and retrieval with a urologic basket device. The incision was made through the scar that resulted from the initial trauma. The frontal sinus was entered using a standard otologic drill. The BB was noted to be lodged in the nasofrontal outflow tract. A urologic basket was used to grasp the BB and remove it from the tract. This resulted in minimal tissue trauma in the tract. The patient reported improvement in headaches and facial pain following the procedure.

CONCLUSIONS: There are several case reports in the literature involving endoscopic or external approaches to foreign body removal from the frontal sinus. In these cases standard instruments such as hemostats were used for retrieval. While effective in isolated cases, use of such instruments brings with it the risk of developing complications. Complications with long-term sequelae include stenosis of the nasofrontal outflow tract (with resulting chronic sinusitis and possible abscess), cerebrospinal fluid leak from damage to the cribriform plate, and orbital injury from damage to the lamina papryce. Additionally, the anatomical location makes approaching and grasping these objects difficult. Above all, removal with minimal tissue trauma is of utmost importance.

CASE REPORT

The patient is a 16-year-old female who presented with complaint of chronic headache and facial pain following BB trauma to her forehead eight months prior. Pain localized over the frontal sinus. Imaging revealed a BB in the right frontal sinus, possibly lodged in the nasofrontal outflow tract. Physical exam revealed a small 7mm laceration at the medial brow line that was well-healed.

INTRODUCTION

The frontal sinus is a rare site of lodgement of foreign bodies. Case reports exist, and the most common foreign body is glass from motor vehicle accidents. Early removal is advocated to prevent sinusitis and potential intracranial complications.

RESULTS

This case resulted in successful removal of a BB from the nasofrontal outflow tract. The patient was taken to the operating room and general anesthesia was induced. Nasal endoscopy and anterior ethmoidectomy was performed. The BB was visualized but noted to be lodged in a narrowing of the nasofrontal outflow tract. The patient’s previous scar site was opened at the anterior table of the frontal sinus was entered using a standard otologic drill. A rigid endoscope was used to visualize the BB in the nasofrontal outflow tract. A urologic basket was used to grasp the BB and remove it from the tract. This resulted in removal with minimal tissue trauma in the tract. The sinuses were irrigated and the incision was closed. At three months follow-up, the patient reported improvement in headaches and facial pain and no further episodes of acute sinusitis.

DISCUSSION

There are several case reports in the literature involving endoscopic or external approaches to foreign body removal from the frontal sinus. The most frequently reported foreign body in the frontal sinus is glass from motor vehicle accidents. In these cases standard instruments such as hemostats were used for retrieval. While effective in isolated cases, use of such instruments brings with it the risk of developing complications. Complications with long-term sequelae include stenosis of the nasofrontal outflow tract (with resulting chronic sinusitis and possible abscess), cerebrospinal fluid leak from damage to the cribriform plate, and orbital injury from damage to the lamina papryce. Additionally, the anatomical location makes approaching and grasping these objects difficult. Above all, removal with minimal tissue trauma is of utmost importance.

REFERENCES