A 14-year-old female presented to the Emergency Department with an 8-day history of worsening headache and right-sided nasal obstruction. She described her headache as pain and pressure localized primarily over the right periorbital and temporal region. She reported mild puffiness in the region and associated nausea, but denied blurry or double vision, fevers, chills, or episcleritis. Her past medical history was significant for type I diabetes mellitus, ADHD, and migraines, which are characterized by nonfocal pain lasting no more than 2 days. Nasal endoscopy revealed a pinkish-white mass at the ostium of the right middle meatus with underlying purulence. The mass was obstructing the entire right nasal cavity with the exception of a sliver of space inferiorty. The left nasal cavity was patent but narrowed from septal deviation.

A non-contrast maxillofacial CT scan (Figure 1) demonstrated a space-occupying, destructive lesion of the right nasal passage near the middle turbinate bone with displacement of the turbinate to the left, and destruction of the turbinate bone, infundibulum, medial wall of the right maxillary sinus, and inferior wall of the ethmoid sinuses. The right frontoethmoidal and maxillary sinuses were completely opacified. MRI of the face was obtained due to the concern of a destructive mass in the nasal cavity (Figure 2). This showed asymmetric mucosal enhancement and fluid material in a right osseous nasal mass. CT and MRI prior to opening concha bullosa mucopyocele.

A mucopyocele of the para nasal sinuses differs from typical mucoceles in that it is a true mucus retention cyst with an epithelial lining most often caused by obstruction1. This obstruction of normal mucociliary flow may be secondary to nasal polyps, facial trauma, sinus surgery, or tumors, and leads to an accumulation of mucoid fluid and the development of a slowly expanding mass2. These become symptomatic due to impingement of surrounding structures, and can cause local bony destruction and remodeling. Mucoceles that become secondarily infected are called mucopyoceles. Mucopyoceles and mucopyoceles most commonly occur in the frontoethmoid, ethmoid, and maxillary sinuses, but rarely develop in a concha bullosa.

A concha bullosa is a pneumatized middle turbinate and was first described by Zuckerkandl in 18931. The middle turbinate is a bone plate located inferomedially to the ethmoid air cells and a concha bullosa, the most common variant in the sinonasal anatomy, is an extension of these systems present in the rest of the paranasal sinuses, as well as an ostium connecting it to the frontal recess3. Therefore, obstruction of the ostium from inflammatory edema, polyps, surgery, trauma, or tumor can lead to the development of a mucocoele or mucopyocele. The first reported case of middle turbinate concha bullosa mucopyocele was by Badia in 19944.

Although a concha bullosa is most often an incidental finding with localized right-side facial pain, pressure, and headaches. The patient had no rhinorrhea, fever, and had a normal white blood cell count and C-reactive protein.

Methods: Case report of a 14-year old adolescent with a concha bullosa mucopyocele presenting as a nasal mass. 2) Review the existing literature discussing mucopyocele of a concha bullosa.

In conclusion, a mucopyocele is an epithelial-lined, benign, expansile mass that is secondarily infected. Although it typically occurs in the paranasal sinuses, in rare cases it can develop in the concha bullosa of the middle turbinate. The differential diagnosis for this intranasal mass is initially broad but CT and MRI imaging are invaluable in the diagnostic process. The required treatment for concha bullosa mucopyocele is endoscopic surgery, which produces effective results.