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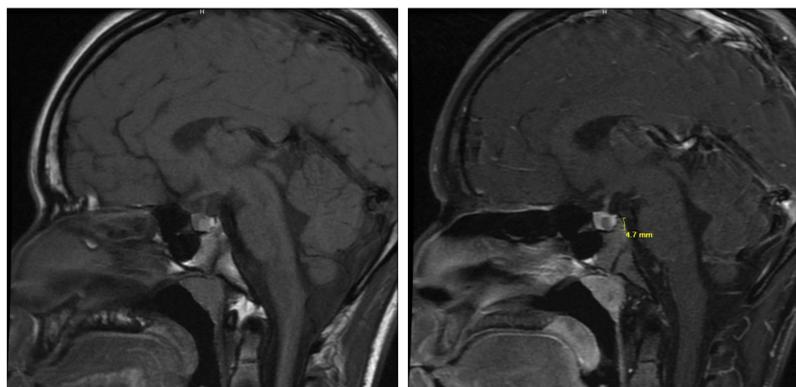
Introduction

- Rathke's (a.k.a. pars intermedia) cleft cysts (RCCs) are benign cystic pituitary lesions thought to arise from embryonic remnant of the craniopharyngeal duct or Rathke's pouch.¹
- Although often incidentally found, enlarging RCCs can exert locoregional mass effects such as headaches, vision changes, and/or hormonal derangements.^{1,2}
- Previous management strategies involved resection but found to have high recurrence rate of between 11-14%.²
- Marsupialization of the cyst into sphenoid sinus became a preferred method of management given lower risk of surgical complication when compared to complete resection.^{3,4}
- More recent strategies to reduce RCC recurrence following marsupialization involve use of self-expanding bioabsorbable steroid-eluting (BASE) stents.^{2,5}
- However, literature on safety and efficacy of marsupialization and use of BASE stents in pediatric patients are sparse.
- In this case presentation, we describe an endoscopic endonasal approach in management of Rathke's Cleft Cyst with marsupialization via BASE stent in a pediatric patient.

Case Presentation

- 15-year-old male followed by endocrinology for short-stature.
- Initial MRI with intrinsically T1 hyperintense, non-enhancing 5-mm lesion between the adenohypophysis and neurohypophysis (Figure 1A).
- No known endocrinopathies to suggest congenital adrenal hyperplasia or HCG producing tumor.
- Overall clinical picture consistent with possible precocious/central puberty vs familial short stature with incidentally found Rathke's Cleft Cyst.
- Surveillance MRI two years later with increase in size of the pituitary lesion, prompting surgical evaluation (Figure 2B).
- No focal neurological deficit on evaluation.
- Recommended endoscopic endonasal marsupialization of RCC given interval growth with risk of mass effect in the future.

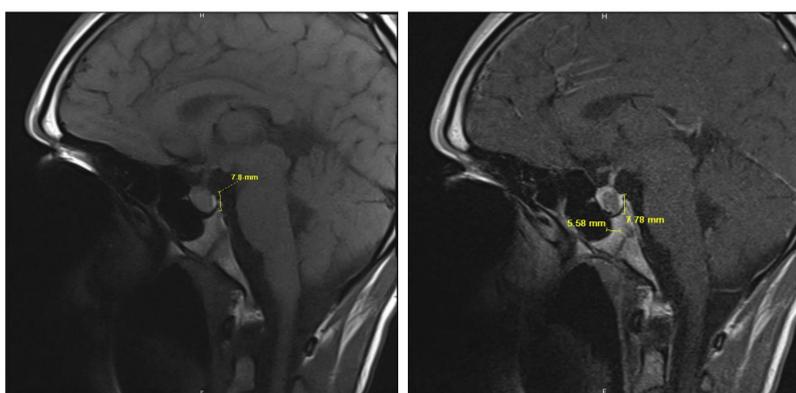
A. Initial MRI



T1 without contrast

T1 with contrast

B. Two-year surveillance MRI



T1 without contrast

T1 with contrast

Figure 1. A. Pre-operative MRI demonstrating intrinsically T1 hyperintense, non-enhancing 5-mm lesion between the adenohypophysis and neurohypophysis characteristic of Rathke's Cleft Cyst. B. Interval growth of the pituitary lesion in two years.

Key Operative Steps

- Bilateral inferior turbinate out-fracture
- Bilateral middle turbinectomy
- Bilateral total ethmoidectomy
- Bilateral sphenoidotomy
- Bilateral rescue flaps
- Posterior septectomy
- Resection of sphenoid rostrum
- Drill a window through sellar face
- Cruciate dural opening
- Resection of anterior and lateral cyst walls along with contents
- Placement of self-expanding BASE stent (Figure 2A and B)
- Buttress the BASE stent circumferentially to ensure no mobility within the common sphenoid sinus



Link to surgical video

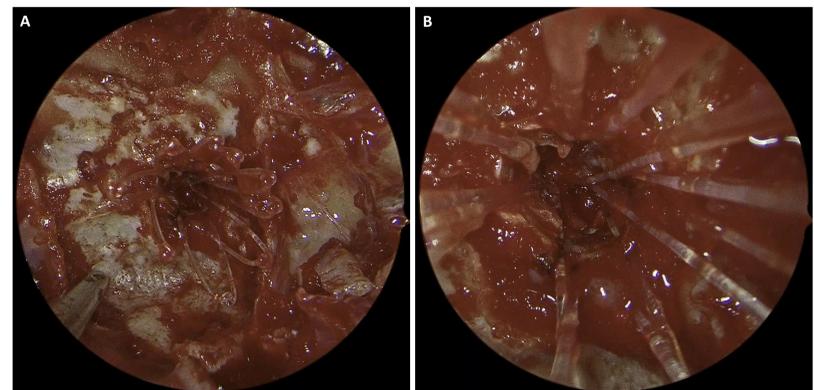


Figure 2. A. BASE stent through the sellar window B. Cystic tract propped open with BASE stent.

Outcome

- Serial nasal endoscopy without evidence of recurrent disease at 2-months, 6-months, and 1-year following the surgery (Figure 3)
- Surveillance MRI two years following surgery without evidence of recurrent disease (Figure 4).

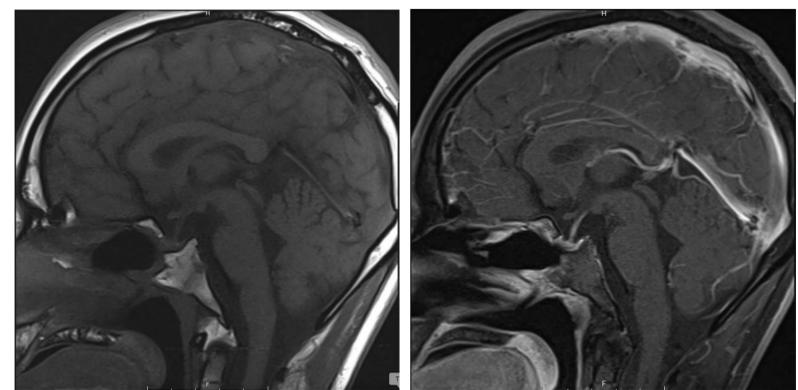


2-months post-op

6-months post-op

1-year post-op

Figure 3. Surveillance nasal endoscopy demonstrating durability of marsupialization.



T1 without contrast

T1 with contrast

Figure 4. Surveillance MRI two years following the surgery without evidence of recurrent disease.

Discussion

- Endoscopic endonasal marsupialization via drug-eluting stent is an effective and durable option for the management of Rathke's Cleft Cyst
- Ensure no CSF leak prior to stenting to prevent persistent leak
- Raise and preserve a rescue flap for skull base reconstruction in case of CSF leak

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