Introduction

We describe a unique iatrogenic defect created during endoscopic pituitary surgery that is important to identify because it produces an intraoperative cerebrospinal fluid (CSF) leak that is not easily controlled by standard inlay dural reconstruction.

Methods

A retrospective analysis of all pituitary adenomas treated surgically at a tertiary referral institution over the past thirteen years was conducted. A total of 631 patients were identified.

Results

• This defect is precipitated by tumor expansion of the sella, causing the insertion of the diaphragm to appear more inferior than expected along the anterior portion of the sellar dura (Figure 1). It occurs as a result of superior extension of the initial dural incision in those patients with a low anterior insertion of the diaphragm sella. This incision unintentionally enters the suprasellar cistern above the diaphragm sella creating an immediate direct CSF leak.

• This leak must be recognized and is particularly challenging to repair because a defect in this location is effectively supra-diaphragmatic and not amenable to standard inlay graft placement (Figure 2).

• As seen in this series, the addition of a nasoseptal flap was required for reinforcement approximately 50% of the time.

• Despite being a difficult location to repair, there were no postoperative leaks in this cohort.

Conclusion

Iatrogenic anterior sellar diaphragmatic defects located at the displaced junction of the dura and diaphragm represent a distinct intraoperative consideration during endoscopic pituitary surgery. Successful repair can be achieved with proper positioning of a dural substitute, but it is important to recognize that these defects often require a multilayer reconstruction with the additional use of a nasoseptal flap.

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REFERENCES: