Trans-oral Ventriculoperitoneal Shunt Migration in an Adult Patient

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Introduction

Ventriculoperitoneal (VP) shunt placement is a common neurosurgical procedure for the management of hydrocephalus. Although a VP shunt can be lifesaving, complication rates are reported to be up to 20%. Complications include shunt failure and malfunction, infection, over drainage, and less commonly shunt malposition and migration. Migration typically occurs at the distal catheter end and commonly via peritoneal perforation and has been reported in various anatomical locations including bladder, lumbar soft tissue, scrotum and spontaneous intracardiac migration. Case reports of oropharyngeal migrations have been reported in pediatrics but to our knowledge none have been reported in adults. We present the first known case of trans-oral VP shunt migration in an adult patient.

CASE DESCRIPTION

A 52-year-old female with hydrocephalus due to subarachnoid hemorrhage status post VP shunt was admitted to the hospital for confusion and dysarthria. Workup revealed worsening hydrocephalus which was managed by adjusting the VP shunt settings. She was subsequently discharged to an inpatient rehabilitation facility (IRF). On the sixth day in rehab the patient vomited out a long catheter. She became more lethargic and was transferred to the emergency department. Imaging revealed that the VP shunt catheter was protruding from the patient's mouth. Empiric antibiotics were started, and she was transferred back to the hospital for emergent neurosurgical and ENT intervention. Direct visualization by laryngoscope revealed that the VP shunt catheter penetrated the hypopharynx via the pyriform sinus. The VP catheter was externalized. CSF cultures were positive for Leclercia adecarboxylata. The patient's mental status significantly improved following VP shunt externalization. She was discharged back to the IRF weeks later.

Figure 1: Photo of the patient in the emergency department prior to transfer to the acute care hospital. The VP shunt catheter has been taped to her cheek.

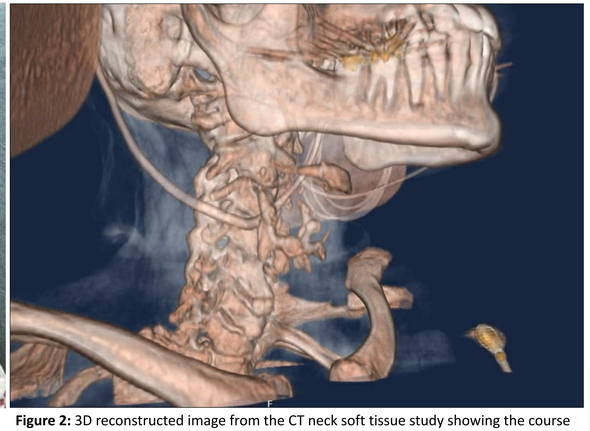

Figure 2: 3D reconstructed image from the CT neck soft tissue study showing the course of the VP shunt catheter.

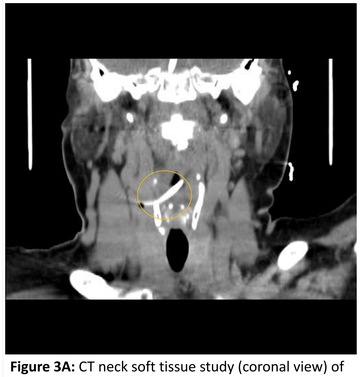

Figure 3A: CT neck soft tissue study (coronal view) of the patient on arrival to the acute care hospital. The VP shunt catheter is circled in yellow.

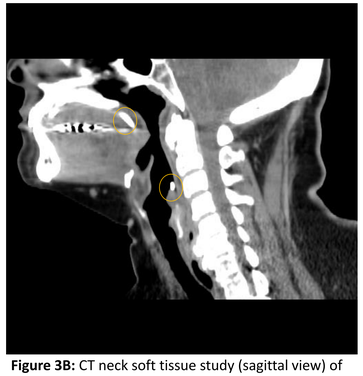

Figure 3B: CT neck soft tissue study (sagittal view) of the patient on arrival to the acute care hospital. The VP shunt catheter is circled in yellow.

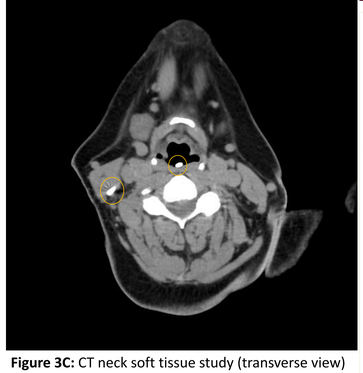

Figure 3C: CT neck soft tissue study (transverse view) of the patient on arrival to the acute care hospital. The VP shunt catheter is circled in yellow.

DISCUSSION

VP shunts play an important role in the management of hydrocephalus in the acquired brain injury population, but the complication rate is high. There have been a few reported cases of trans-oral VP shunt migration in the pediatric population, but to the authors' knowledge, this is the first reported case of trans-oral VP shunt migration in an adult patient. The IRF physiatrist needs to be able to quickly identify VP shunt complications and be able to refer them to the appropriate level of care in order to prevent significant morbidity

CONCLUSION

We present the first known case of trans-oral VP shunt migration in an adult patient. Due to the rarity of cases, more research is needed to better understand the mechanism of trans-oral VP shunt migration.

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