

## **Almost the Same Shunt, Different Day.**

### **Background:**

Ventricular-peritoneal (VP) shunts in children are used to enhance cerebrospinal fluid (CSF) drainage in cases of hydrocephalus. These shunts typically drain CSF from the ventricular system to the peritoneal space. Children with CSF shunts are at risk of complications such as shunt blockage, fracture and infection. All of these conditions may present with similar clinical features such as headache, vomiting and visual disturbance. Nuclear medicine CSF shunt studies are used to investigate for shunt complications and we present a case of shunt blockage in a child due to an unusual occurrence, a CSF pseudocyst.

### **Case Description:**

A three year old male with a background of hydrocephalus and bilateral CSF shunts in-situ, presented to the emergency department with suspected appendicitis. An abdominal ultrasound was performed which was unable to identify the appendix. However at the distal end of the ventricular-peritoneal shunt a moderate sized multi-septated complex fluid collection was visualised. A nuclear medicine CSF shunt study was performed.

### **Procedure Performed:**

A CSF shunt study was performed on the patient's right sided V-P shunt. 20MBq of <sup>99m</sup>Tc-DTPA (diethylenetriaminepentaacetate monohydrate) was injected under sterile conditions into the right parietal shunt reservoir whilst pressure was applied to the external catheter at the neck base. Sequential static imaging commenced immediately afterwards of the head, torso and abdomen.

### **Findings:**

The study showed a patent VP shunt, however at the distal end of the shunt, a localised collection of tracer was visualised corresponding to the complex abdominal fluid collection, confirming the diagnosis of a CSF pseudo cyst. The patient went on to have surgical drainage of the pseudocyst and revision of his CSF shunts.

### **Conclusion:**

CSF pseudocysts are a rare complication of CSF shunts but are important to diagnose correctly. Our CSF shunt study confidently diagnosed and localised the CSF pseudocyst leading to prompt surgical intervention.