

## V-P shunt calcification

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**Section:** Head & neck imaging

**Area of Interest:** Head and neck Thorax

**Procedure:** Catheters

**Imaging Technique:** CT

**Special Focus:** Acute Calcifications / Calculi Case Type:

Clinical Cases

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**Patient:** 17 years, male

### Clinical History:

A 17-year-old male patient known to have congenital hydrocephalus with a V-P shunt presented to clinic during his regular follow-up with a history of partial thickening of the V-P shunt catheter in the lower neck region. No history of headache or vomiting.

### Imaging Findings:

Shunt series radiographs showed a right-sided V-P shunt with no evidence of breakage; however, irregular thickening was noted in the lower cervical region.

CT soft tissue neck showed thickening of the V-P shunt catheter in the cervical region, starting at the level of C3-4 intervertebral disc and extending up to C7 vertebral level.

This focal thickening is secondary to irregular calcification surrounding the course of the shunt catheter. No obvious breakage or discontinuity was noted in the visualised part of the V-P shunt.

### Discussion:

Ventriculoperitoneal (V-P) shunt is an effective treatment for hydrocephalus [1].

An early complication of V-P shunts is disconnection, which may occur during the first few post-operative days due to poor quality shunt components or improper surgery. Obstruction of the shunt is a common complication which occurs mainly in the proximal part due to blood products/ debris accumulation or even shunt kinking [1].

Late complications can be due to mechanical stress mainly in the neck causing tethering of the shunt, fracture and migration [1].

V-P shunt catheter pathway calcification caused by deposition of calcium and other minerals is a rare long term complication and may be related to ageing of shunt material [2].

Calcification is mainly a feature of barium-impregnated catheters and following the introduction of plain silicone coated shunt catheters the rate of calcification has reduced [3].

Patients with V-P shunt calcification may present with pain in the affected area along the shunt track. The most commonly affected region is the neck [2].

V-P shunt calcification can be associated with skin irritation, a palpable lump or signs of shunt obstruction such as

headache and vomiting [2].

If calcification around the shunt tube is suspected, shunt-view radiographs are recommended [4].

Management of VP shunt calcification is removal of the old catheter and subsequent shunt replacement [2].

**Differential Diagnosis List:** Shunt tube calcification as a late complication of VP shunting., Breakage of V-P shunt, Shunt occlusion

**Final Diagnosis:** Shunt tube calcification as a late complication of VP shunting.

**References:**

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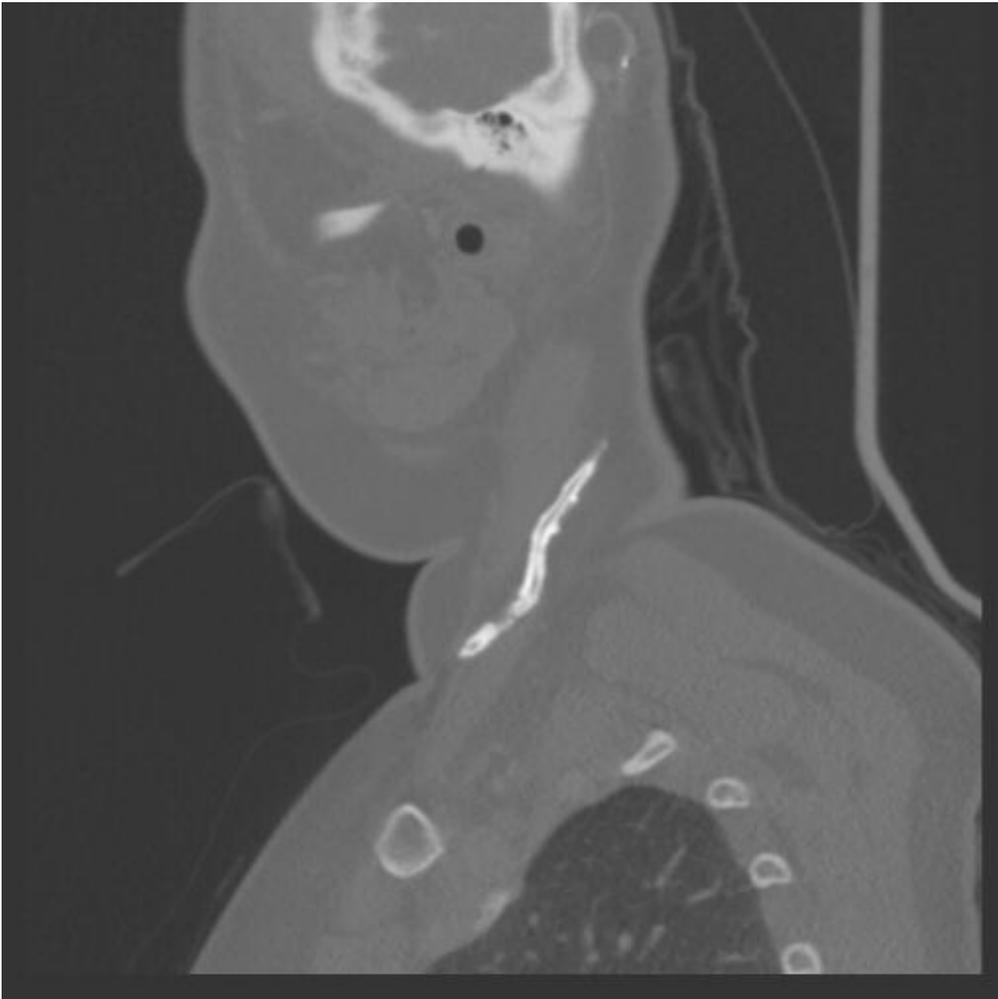
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**Figure 1**

a



**Description:** Irregular calcification surrounding the course of the VP shunt catheter in the right lower lateral neck, appearing as a thickened shunt tube. **Origin:** Sheikh Khalifa medical city. Abu Dhabi, UAE.

**Figure 2**

a



**Description:** Irregular calcification surrounding the course of VP shunt catheter in the right lower lateral neck, appearing as a thickened shunt tube. **Origin:** Sheikh Khalifa Medical City. Abu Dhabi, UAE.

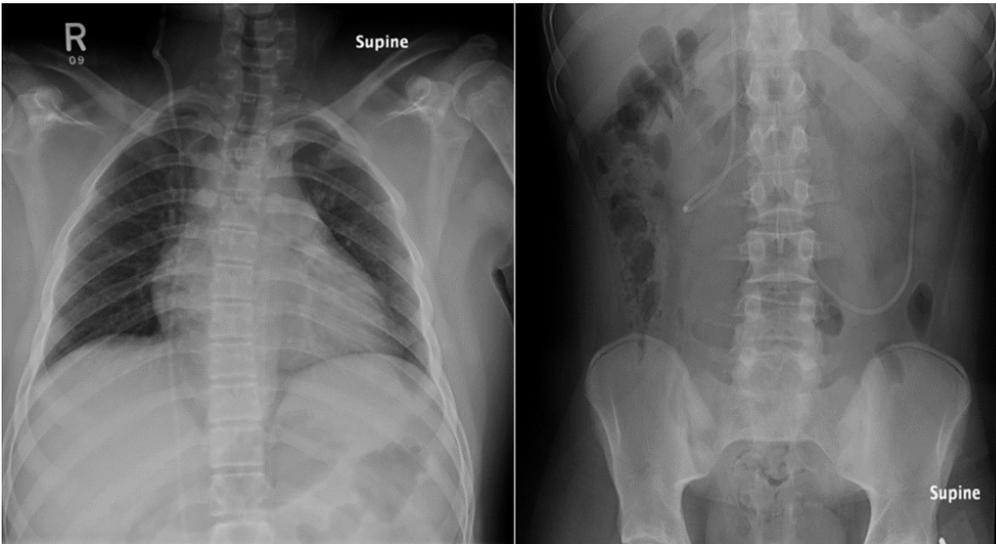
## Figure 3

a



**Description:** Head and neck AP and lateral radiographs demonstrate a right-sided V-P shunt with no evidence of breakage. However, irregular thickening is noted in the lower cervical region. **Origin:** Sheikh Khalifa Medical City. Abu Dhabi, UAE.

b



**Description:** Chest and abdominal radiographs partially visualise the VP shunt overlapping the right hemithorax and abdomen with no evidence of calcification or discontinuity. **Origin:** Sheikh Khalifa Medical City. Abu Dhabi, UAE.