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Spinal Dural AVF – The Red Herring: Challenges in Diagnosis in Rural Area.

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BACKGROUND

Thorough history clerking and clinical examination were important in getting the correct diagnosis for precise treatment. Although there was an improvement in technology, the language barrier and clinical suspicion remain the main challenges. Here we present a man who came with lower limb weakness with lumbosacral MRI showing spinal dural arterio-venous fistula (AVF), which later turned out to be positive for rabies.

CASE PRESENTATION

A previously healthy 50 years old man from the deep interior part of Sarawak presented with 5 days history of progressively worsening and ascending paraparesis with dyspnea requiring intubation. History taken from the family revealed no trauma or infective cause. However, there was language barrier as the patient's family could only speak their mother tongue and not the common indigenous language like Iban. Bilateral lower limbs were hypotonic and areflexic with power of 0/5. The sensation was reduced from T8 and below. The anal tone was lax with urinary retention requiring catheterization. Whole spine MRI showed spinal dural AVF from T5 to T11. Thus, the case was referred to us. However, from our assessment, we came to the diagnosis of Guillain-Barre Syndrome (GBS) and was referred back to the medical department. He was admitted for IVIg but during the stay, he developed rapidly progressive ascending flaccid paralysis requiring intubation and mechanical ventilation, and hypersalivation, of which the saliva for positive for rabies.

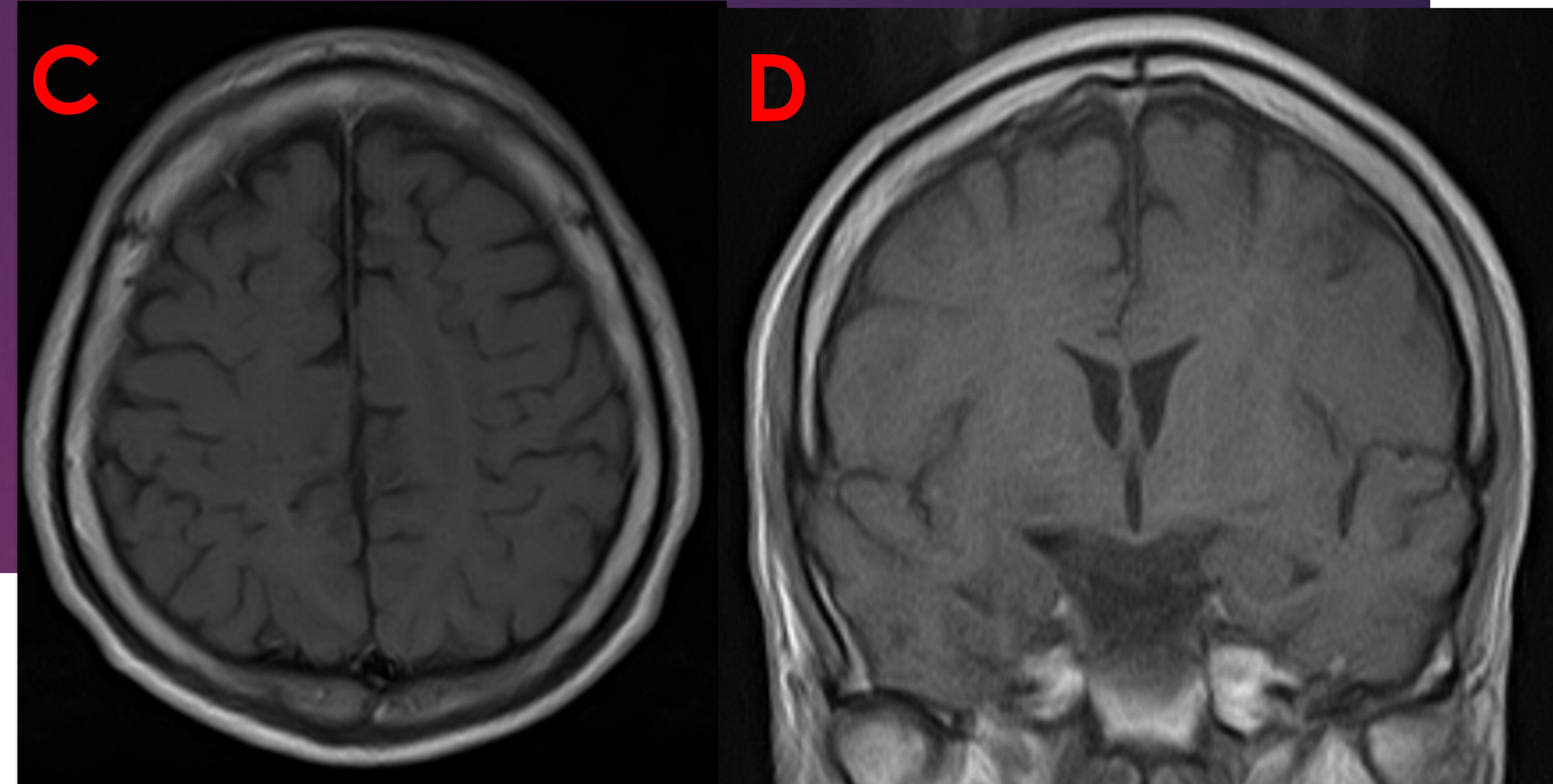


Figure C: Axial cut of MRI Brain (T1 GAD) showed no obvious lesion.

Figure D: Coronal cut of MRI Brain (T1 GAD) also revealed no obvious lesion that can cause paraplegia.

DISCUSSION

Spinal dural AVF is the most commonly encountered vascular malformation of the spinal cord and a treatable cause for progressive para or tetraplegia, of which the arterial blood from radiculomeningeal artery enters radicular vein, thus causing the increase in spinal venous pressure that leads to progressive myelopathy². The onset of symptoms of spinal dural AVFs is often insidious with progression over years. The common clinical presentations include weakness of lower extremities, sensory changes, and with or without sphincter dysfunction. Digital subtraction angiography (DSA) remained gold standard in confirming spinal dural AVF.

As for this case, high clinical suspicion is crucial to rule out other life-threatening diseases such as GBS and rabies especially if the symptoms progress quickly over days and weeks instead of months and the patient showed lower motor neuron signs. Lumbar puncture for CSF evaluation should be the next step to rule out the two mentioned differential diagnosis before we come to a conclusion of diagnoses.

CONCLUSION

In this case, the spinal dural AVF became the red herring that misled us from getting the correct diagnosis initially. Although rabies was virtually 100% fatal, timely management might have helped the patient. Time constraint due to high workload with minimal workforce should not limit us from taking a good history and performing a thorough examination.

REFERENCES

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2. T. Krings, S. Geibprasert. Spinal Dural Arteriovenous Fistulas. *AJNR Am J Neuroradiol*. 2009 Apr; 30(4): 639–648.

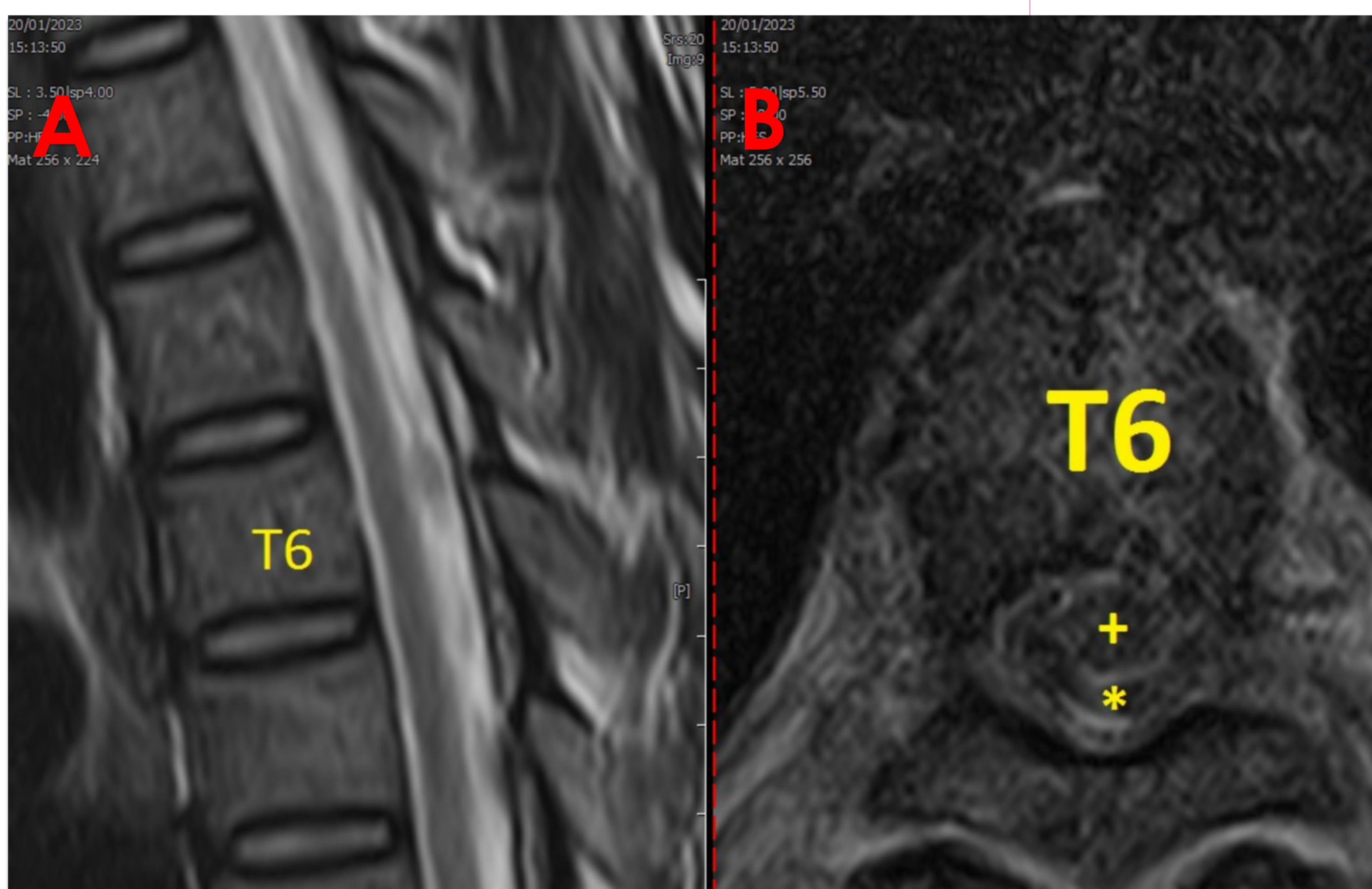


Figure A: Sagittal cut of T2 weighted thoracolumbar MRI showed dilated vessels from the level of low T4 to T7.

Figure B: Axial cut of T2 weighted thoracolumbar MRI. (*) represented the dilated vessels without compressing on the spinal cord (+).

However the site of maximal MRI abnormality is not a reliable indicator of the location of the fistula, which can be many levels away¹.