

Case Report

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Spinal Peri-Neural Cysts Significant or Innocent?

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ABSTRACT

Postganglionic neural cyst, considered usually innocent with little if any clinical significance is rarely reported. It is occasionally found at the lumbo-sacral region of the spine, rarely at the cervical spine level and very rarely reported at the thoracic spine. A case with multilevel, bilateral thoracic cysts is presented, with consideration of its' clinical suggestion to be a post-traumatic event.

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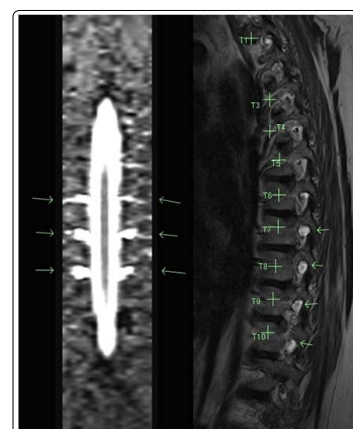
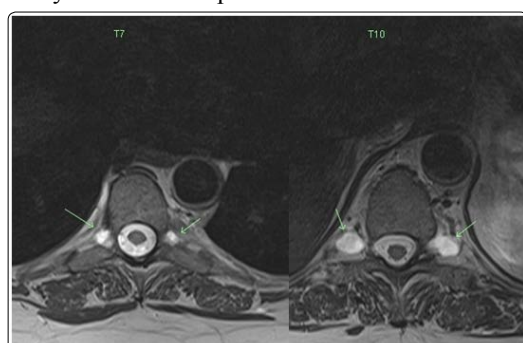
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Introduction

Post ganglion peri-neural cyst, extra-dural and extra-spinal, was known as a congenital anomaly. Described in detail in 1938 was as a cyst, presented by a Canadian neurosurgeon and since, carrying his name, Tarlow. Rarely found and often asymptomatic, it is usually discovered incidentally in tests done for unrelated condition. It was previously detected in a contrast myelogram study and recently more precisely diagnosed with Magnetic Resonance Imaging. Its' significance has remained unresolved, whether a congenital variation or with some clinical significance, post-traumatic or post-infection.

Case Report

A 65 year old overweight woman, who suffered from thyroid disease, but was otherwise in good general health was diagnosed with a fractured pubic bone rami in the right side, and also with moderately advanced degenerative spine, with slight instability at L2-3 inter-vertebral level. The pubic fracture healed with delay, symptomatic well over one year later. The considerable thoracolumbar area pain was treated with physical therapy and analgesics. Blood chemistry showed supplemented normal thyroid function, normal chemistry and non-altered parathyroid function. Bone densitometry showed osteopenia.



Radiology: Legend Fig 1, 2, 3 & 4 of the radiological findings: No lumbar or sacral cysts were found, but uni- and bi-lateral thoracic ones. 1. Axial T2WI bilateral thoracic peri-neural cysts at T7; 2. Axial T2WI bilateral thoracic peri-neural cysts at T10; 3. Coronal T2WI bilateral thoracic peri-neural cysts; 4. Sagittal T2WI thoracic peri-neural cysts.

Discussion

Peri-neural Tarlow cyst, that is postganglionic at the dorsal nerve root and emerging from the spine is usually considered an embryological variant. Originating in the mesenchymal tissue, the peri-neuron covers the extra-dural segment of the nerve root. This extra-dural and postganglionic cyst, covering the peri-neural sheath, is differentiated from the, intra-dural, intra-spinal meningeal cyst [1].

Reviewing the history before radiology, we found peri-neural cysts described in the Viennese medical literature, dating back at least to 1892.

The "cyst" was also detailed by Otto Marburg in 1902 in a long and detailed study of over 70 pages, with numerous histological

images [2]. The study was extensive and was presented as an inflammatory case, supported by an extensive list of references. Histological studies suggested the presence of nerve endings and inflammatory infiltrate in the walls of the cyst. Further studies with more histological images were published by Uwe Hinrich in 1932, with three various types, described histologically with bleeding and inflammation in the cyst [3].

It was in 1938 that Isadore Tarlow (now in The Hospital for Joint Disease in New York), conducted extensive studies, from which only a few were quoted. Essentially, whilst acknowledging previous Viennese studies, he extended the pathology, presented the diagnosis only in delayed, 24-48 hours contrast pantopaque images. The last published Tarlow study dated 1970 is extensive and differentiated the peri-neural from the meningeal cysts. [4,5].

Reviewing the literature, occasional symptomatic cysts are reported in sacral areas with sciatic symptoms. There were two publications of rare thoracic peri-neural cysts bilateral at T1 level, with neural compression requiring surgical intervention.

The authors promoted the classification suggested by Nabros et al. with clinical logic [6]:

- Type I: extra-dural cysts, without nerve root fibres,

-Type II: extra-dural cysts with nerve fibers and symptomatic

-Type III: intra-dural cysts

Of importance and in addition to previous preliminary studies, Tarlow documented fibrous tissue thickening of the walls, containing lymphocytes and plasma cells, supporting the theory of either primary or reactive inflammatory aspects of the “innocent cyst.” [7].

Conclusion

The authors present an unusual case of 16 multilevel bilateral neural cysts in thoracic spinal roots, including levels from T1/2 to T11/12. Reviewing some of the spare literature on the topic, we concluded that despite the existence of previous studies on this topic, I M Tarlow, deserves to carry the name. It is our impression that trauma might have lead to an inflammatory reaction, with fluid accumulation in the cysts at multi-levels of the thoracic spine, and possibly blocked below the unstable L1-2 level. This suggestion remains as a likelihood, as no biopsy is at hand and no intervention has occurred.

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