



Phalanx-like osseous structure posterior to the cervical vertebrae: a hitherto unreported location for a rare anomaly

Servikal vertebra posteriorunda falanks benzeri ektopik kemik yapı: Nadir bir anomali için bildirilmemiş bir yerleşim bölgesi

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Birçok tipte vertebral kolon anomalisi bildirilmiştir. Pelvik kosta ve pelvik parmak, nadir görülen spinal anomalilerdir. Elli sekiz yaşındaki erkek hasta ensesinde sert kitle şikayetiyle başvurdu. Travma öyküsü yoktu ve hasta uzun yıllar kitlenin farkında idi. Fizik muayenede, ensede 4x1 cm boyutlarında, ağrısız ve hareketsiz kitle saptandı. Boyun hareketleri tüm yönlerde yaklaşık 10-15 derece kısıtlı ve hafif ağrılı idi. Servikal bölgenin direkt grafisinde C₆ vertebra spinöz çıkıntısı posteriorunda, koksiks segmentini veya falanksı andıran iki adet kemik oluşum görüldü. Kemik oluşumlarda iyi şekillenmiş korteks ve medulla; ayrıca, spinöz çıkıntı ile ve kendi aralarında psödoartikülasyon vardı. Bu bulgular üçboyutlu bilgisayarlı tomografi ve manyetik rezonans görüntüleme ile de doğrulandı. Ameliyat önerilen hasta, fazla şikayeti olmadığı için cerrahi müdahaleyi kabul etmedi. Bilgilerimize göre, bu anomali servikal bölgede daha önce bildirilmemiştir.

Anahtar sözcükler: Anormallik/radyografi; servikal vertebra/anormallik/radyografi; spinal kord/patoloji.

Several types of abnormalities of the vertebral column have been reported. Pelvic rib or pelvic digit is a rare congenital anomaly of the spine. A 58-year-old male patient presented with a complaint of a firm mass in the neck. He had no history of trauma and had been aware of the mass for years. Physical examination showed a painless and immobile mass in the neck, measuring 4x1 cm. About 10 to 15 degrees of restriction was noted in neck movements, with slight pain. A plain radiograph of the cervical region showed two bony formations resembling a coccygeal segment or a phalanx, posterior to the spinous process of the C₆ vertebra. They had well-defined cortices and medullae and pseudo-articulation between each other and with the spinous process. These findings were confirmed by three-dimensional computed tomography and magnetic resonance images. The patient did not accept surgery for the lesions were not associated with a significant discomfort. To our knowledge, such a digit has hitherto not been reported in the cervical region.

Key words: Abnormalities/radiography; cervical vertebrae/abnormalities/radiography; spinal cord/pathology.

In the spinal column, many anomalies related to formation or segmentation defects have been reported.^(1,2) Anomalies that have a cortex and develop in the soft tissues around the vertebral column are very rare, and radiologically they look like ribs or digits.⁽³⁾ When

seen within the pelvis or abdomen these anomalies are known as pelvic ribs or pelvic digits.⁽⁴⁻⁶⁾ According to our search of the literature, an anomaly in the cervical region like the one we present here has not been previously reported.

Case report

A 58-year-old man presented at our hospital with a complaint of a hard mass in the posterior neck. He had no history of trauma and had noticed the mass many years before. On physical examination, there was a palpable, immovable, painless mass measuring 4x1 cm and located on the patient's posterior neck. There were no local color changes or increases in temperature. Neck range of motion was limited by approximately 10 to 15 degrees in all directions and movement was slightly painful.

Lateral X-ray of the cervical region showed a bony formation that had two segments and was coccyx-like in appearance, located posterior to the spinous process of C₆ (Figure 1). The bony formation was well formed, and both medulla and cortex were visible. Also, there were pseudoarticulations between the bony formation and the spinous process of C₆ and within the bony formation itself, giving a radiological appearance resembling pha-



Figure 1. In the lateral cervical X-ray, a bony formation resembling phalangeal or coccygeal segments is seen posterior to the spinous process of the C6 vertebra.

langeal or coccygeal segments. For detailed investigation, magnetic resonance imaging and three-dimensional computerized tomography were performed. In the images obtained, soft tissue connections were detected between the bony formation and the spinous process of C₆ and between the segments of the bony formation itself (Figures 2a, b). Also, just distal to the formation, a nodular calcification 8 mm in diameter was visible, and advanced degenerative changes in the cervical vertebrae were also impressive.

The patient's neurologic exam was normal. In the musculoskeletal exam no findings were encountered that would suggest an anomaly.

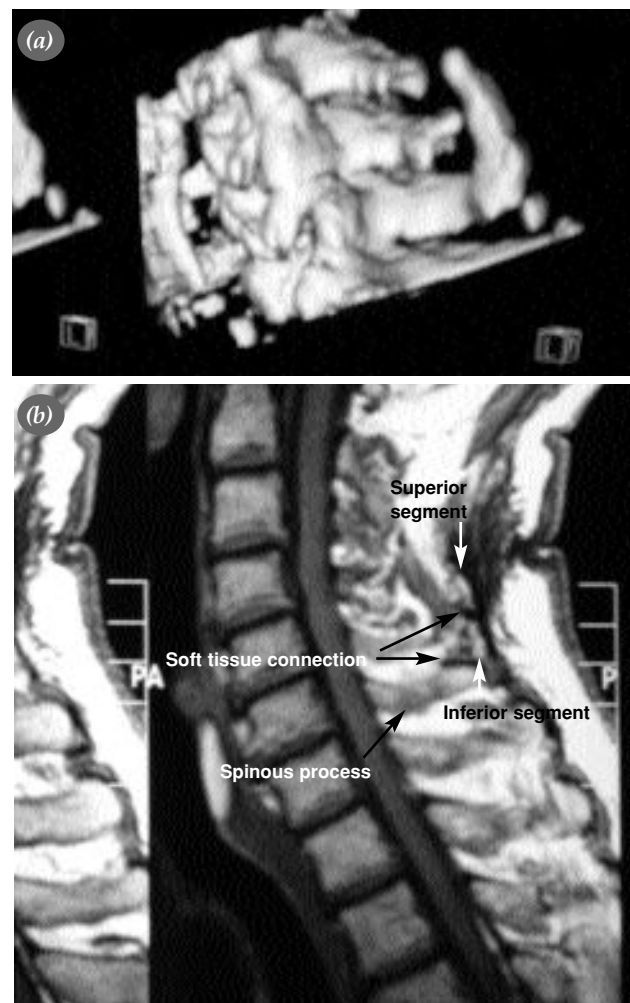


Figure 2. (a) In the three-dimensional computerized tomography image, the connection between the bony formation and the spinous process is seen. (b) In the magnetic resonance image, soft tissue connections are seen between the bony formation and the spinous process of C₆ and between the segments of the bony formation itself.

Due to the mass's radiologic resemblance to segments of the coccyx, the patient's sacrococcygeal region was evaluated radiologically to determine whether there was a defect there, and the entire vertebral column was evaluated as well. The findings obtained were normal.

Surgical intervention was offered to the patient. However, due to the limited nature of the patient's complaints, he did not opt for intervention. For this reason, a histopathologic exam could not be performed.

Discussion

During the vertebral column's development various deformities can emerge. Congenital vertebral anomalies can be due to formation defects or segmentation defects and sometimes to both. Segmentation defects include block vertebra, unilateral bar, and unilateral bar with hemivertebra, and examples of formation defects are wedge vertebra and hemivertebra. Supernumerary vertebral column and location anomalies have been rarely reported.^(7,8) Cases of supernumerary rib, pelvic rib and pelvic digit have been encountered.⁽⁹⁻¹¹⁾

Pelvic ribs or pelvic digits are bony formations that arise in the soft tissue around the vertebral column, and radiologically they resemble ribs or phalanges. They have a cortex and medulla, and generally may be connected to the vertebral column via pseudoarticulations.

Pelvic digits encountered in radiologic exams performed for some other purpose.^(3,12,13)

In our review of the literature we found that digit/rib-like structures in the pelvic region have been reported.^(3-6,10,12-15) Ishikawa and colleagues⁽⁸⁾ identified a digit-like structure in the thoracic region. In this structure, features of a normal finger such as a fingernail and fingerprint were present, as well as other characteristics different from those in our patient and other cases in the literature. McGlone and colleagues⁽³⁾ reported seven cases of pelvic digit found by chance during intravenous urography.

In the report by Kaushal,⁽¹⁰⁾ there was a connection between a pelvic rib and the greater trochanter, and this caused a restriction of motion of the hip joint. The digit-like structure in the thoracic region

reported by Ishikawa and colleagues⁽⁸⁾ was detectable by inspection and palpation. Our patient explained that he had long ago noticed the presence of the mass in his neck. On examination, apart from the mass, limited range of neck motion and pain occurring on motion were noted. The pain and restriction of motion were related to the advanced degree of degenerative changes in the cervical vertebrae.

In our patient's differential diagnosis, post-traumatic myositis ossificans and osteochondroma were considered. The patient's lack of a history of trauma and the clear radiologic visibility of the digit's cortex and medulla were reasons we tended away from a diagnosis of myositis ossificans.⁽³⁾ In osteochondroma, bone formation appears as a continuation of the underlying bone. In our patient no bony connection was seen between the vertebral spinous process and the digit.

The pelvic digit's mechanism of formation is not completely known. In the third week of the embryonic stage, the embryonic mesoderm migrates first from the coccyx-forming region to the region that will form the pelvic wall, and from there to the region that will form the lower anterior abdominal wall. In these cells the capacity to form ribs remains.^(3,15) In the later stages of embryologic development the cells with rib-forming potential are included in the sacrum and coccyx in the pelvic region. These mesoderm-derived cells in the anterolateral pelvis degenerate and are lost. Groups of cells that are lost in this way during embryologic development are encountered frequently, and this event is known as apoptosis or programmed cell death. Unsuccessful apoptosis is a cause of rib formation in this region.⁽³⁾

In our patient, the lesion resembled the digits previously identified in the literature, but also had a coccyx-like appearance on radiologic images. We cannot explain the origin of coccyx-like or digit-like bony formations in the cervical region in terms of previously proposed theories.

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