

42. Common Incidental Findings

Benign vertebral body hemangiomas are a common incidental finding in the spine. Larger lesions may bleed, expand to compress the spinal canal, or weaken the vertebral body leading to fracture, although all of these complications are very rare. Hemangiomas consist of adipose and angiomatous tissue. As illustrated in Figure 42.1, the fat within these lesions

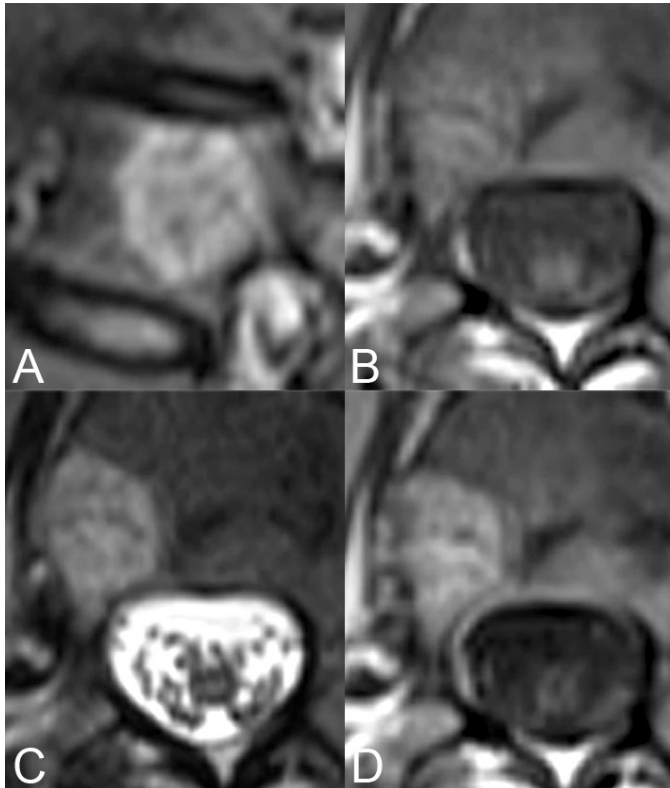


Fig. 42.1

results in a high SI appearance on both (A) FSE T2WI (sagittal) and (B) T1WI (axial). An (C) axial T2WI further illustrates this high SI, while (D) CE T1WI shows the enhancement expected with such a vascular lesion. Trabecular bone, if sufficiently prominent within a hemangioma, leads to vertical low SI striations (i.e. a so-called jail bar appearance). The major differential consideration with vertebral body hemangiomas is focal fatty deposition (which is extremely common in older individuals). Fatty

deposits should exhibit the expected SI characteristics of fat on all pulse sequences. This is illustrated in Figure 42.2 where (A) sagittal T1WI demonstrates a high SI lesion with SI



Fig. 42.2

dropout on (B) FS T2WI. In distinction, the high SI of a hemangioma often persists on FS T2WI, secondary to signal from its vascular components. Schmorl's nodes can be

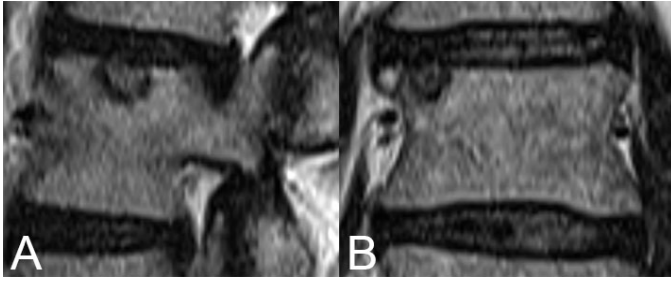


Fig. 42.3

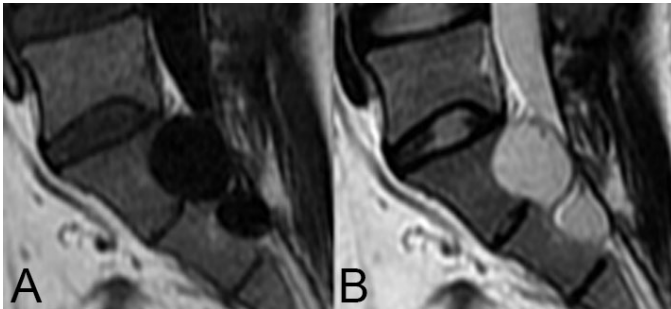


Fig. 42.4

differentiated from these lesions due to their low SI on both T2WI and T1WI. This typically asymptomatic entity results from prolapse of the nucleus pulposus through the end plate and into the medullary vertebral body space as a result of axial loading. Due to their discal origin such lesions, as shown in Figure 42.3 A, B, thus have low SI on both (A) T1 (sagittal) and (B) T2WI (coronal). Granulation tissue at the periphery of Schmorl's nodes may result in peripheral lesion enhancement on CE imaging, while acute (i.e. recently prolapsed) lesions may appear hyperintense on FS T2WI due to surrounding edema. Type 1 endplate degenerative changes may mimic this appearance but will appear less focal, with the associated edema eventually being replaced by fat (Type 2). A focal metastatic lesion may mimic a Schmorl's node, the latter, however, should be contiguous with and isointense to the intervertebral disk.

Tarlov cysts (perineural root sleeve cysts, Fig. 42.4) and synovial cysts are common incidental cystic lesions. The latter, most common in the lower lumbar spine, are associated with degenerative facet disease and may occasionally be symptomatic, resulting in nerve root compression and radicular pain. MRI readily identifies such lesions, often indistinguishable from disk herniations on CT, by their CSF-like SI and close association with a facet joint. These lesions may, however, acquire any combination of SI appearances on T1 and T2WI owing to variability in cystic contents. The cyst capsule typically enhances. Spinal meningeal cysts consist of extradural lesions that do not contain nerve root fibers (Type 1) versus those that do (Type 2) as well as intradural cysts (Type 3). Of these, Tarlov cysts—a type 2 lesion—are most commonly encountered in routine practice.

Such lesions typically involve the sacral nerve roots, and demonstrate CSF SI on all pulse sequences, as shown in the respective sagittal T1 and T2WI of figure 42.4 A, B. As evident in these images, associated foraminal enlargement and posterior scalloping of the vertebral bodies may be present.

Lumbosacral nerve root anomalies are also a frequent incidental finding, particularly at the L5-S1 level. These are crucial pre-operative findings. Several types of conjoined roots are possible, from those arising from a single root sleeve but exiting separately in the appropriate foramina (the most common type) to those with a connecting anastomotic root, to those in which two conjoined roots exit through a single foramen. Figure 42.5 A-F illustrates (A-C) T1 and (D-F) T2WI depicting conjoined left L5 and S1 nerve roots within the left L5-S1 neural foramen. In the lumbosacral spine, T1WI readily depicts hypointense nerve roots against the surrounding high SI fat. The sections chosen for illustration show the two nerve roots on the left (A) just after separation, (B) on the slice just caudal to this, and then (C) on a final more caudal axial slice where relative symmetry of right and left has been re-established. At every level, (D-F) T2WI well-depicts the high SI CSF contained within the root sleeves, allowing identification of the contained, lower SI nerve roots. Nerve sheath tumors may exhibit similar SI to portions of a conjoined nerve root at a given level, the former being distinguished by their bright contrast enhancement. Only the dorsal root ganglia of conjoined nerve roots, in distinction, enhance. Disk herniations and synovial cysts are also differential considerations, the latter as previously noted intimately associated with facet arthropathy. Disk herniations may demonstrate rim-enhancement. In both cases all identifiable nerve roots should exit from the thecal sac at their normal levels.

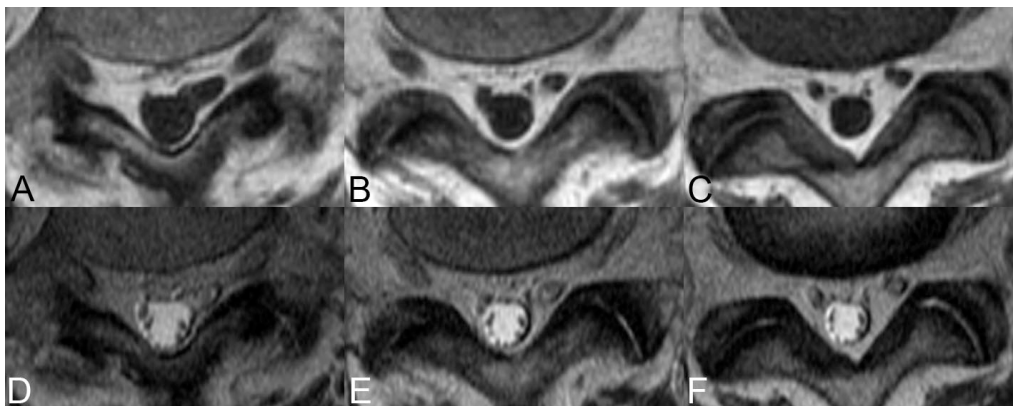


Fig. 42.5