Inner Spaces
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Editor: Dr. Bhavin Jankharia
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Points

- Spinal osteoid osteomas are not uncommon.
- Radiofrequency ablation (RFA) and surgery are the two treatment options.
- RFA can be performed provided adequate care is taken to prevent damage to the cord, nerves and thecal sac.

Radiofrequency Ablation of Spinal Osteoid Osteomas

Osteoid osteomas are not uncommon in the spine and often present diagnostic difficulties. However, once an osteoid osteoma has been diagnosed in the spine, it becomes necessary to decide among the various treatment options.

As in the appendicular skeleton, radiofrequency ablation (RFA) is a definite option for treating spinal osteoid osteomas, wherein we can introduce an electrode into the lesion and burn it.

The use of RFA however depends a lot on the location of the lesion, since there is always a potential risk of damaging the cord, thecal sac or nerve roots. If it is far away from these structures, then the procedure is quite straightforward (Fig. 1). Even if it is near the nerve root, if there is enough cortical bone between the lesion and the nerves, then too, there is no problem (Fig. 2).

However when the lesion does not have adequate cortical bone between it and the nerve and thecal sac, additional measures have to be taken to ensure that there will be no damage to the nerves (Fig. 3). These include, ensuring that the electrode points straight towards the thecal sac, using epidural or foraminal air (air is a poor conductor of heat) or dripping cold distilled water into the epidural or foraminal space.

If RFA can be done safely, as in all the three cases shown, the results are quite rewarding, with virtually instantaneous relief of pain.

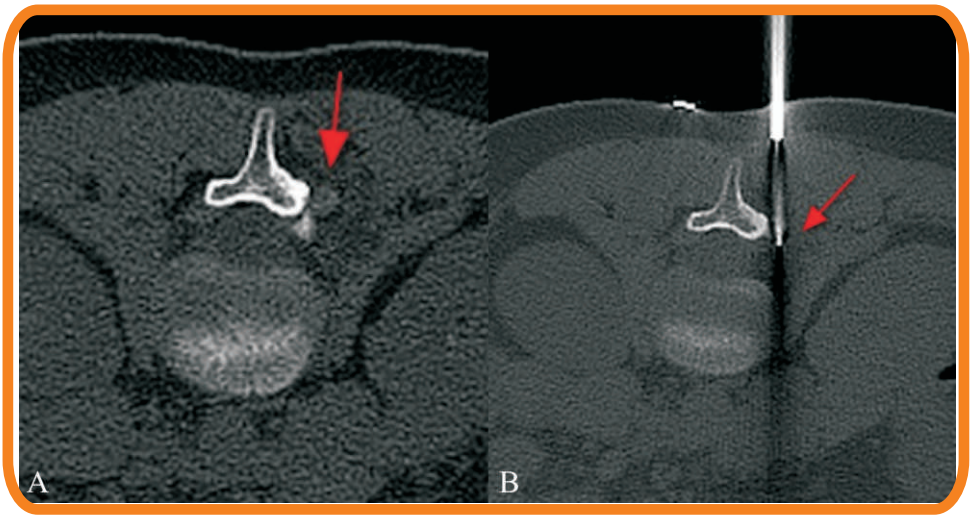

Fig. 1 (A,B): Prone axial CT scan (A) shows an osteoid osteoma (arrow) adjacent to the L2 pedicle on the undersurface of the transverse process. This is far away from the thecal sac and nerve root. The prone axial CT scan (B) shows the position of the electrode (arrow) and the lesion was safely and easily ablated with complete relief of pain.

Fig. 1

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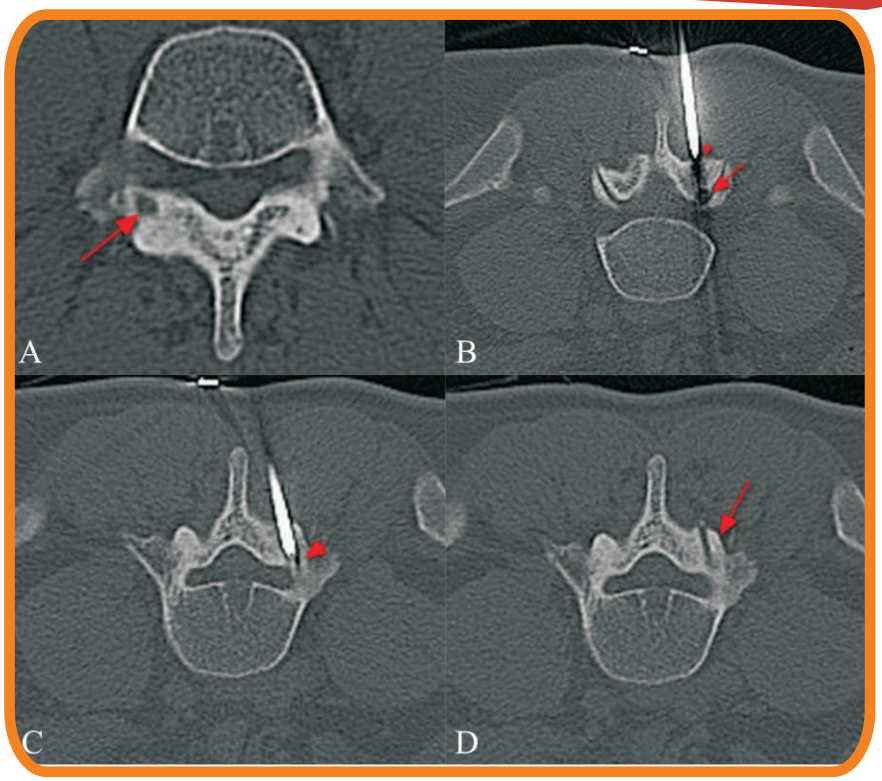

Fig. 2 (A-D): Supine axial CT scan (A) shows an osteoid osteoma (arrow) involving the junction of the right pedicle and lamina of L4. Prone axial CT scans (B,C) show that the lesion (arrow) is covered by the overlying facet joint and hence there is enough bone around it to prevent heating of the adjacent structures. The initial (arrowhead in B) and final (arrowhead in C) position of the needle tip and electrode are shown, along with the final tract (arrow in D), following a successful procedure.

Fig. 2

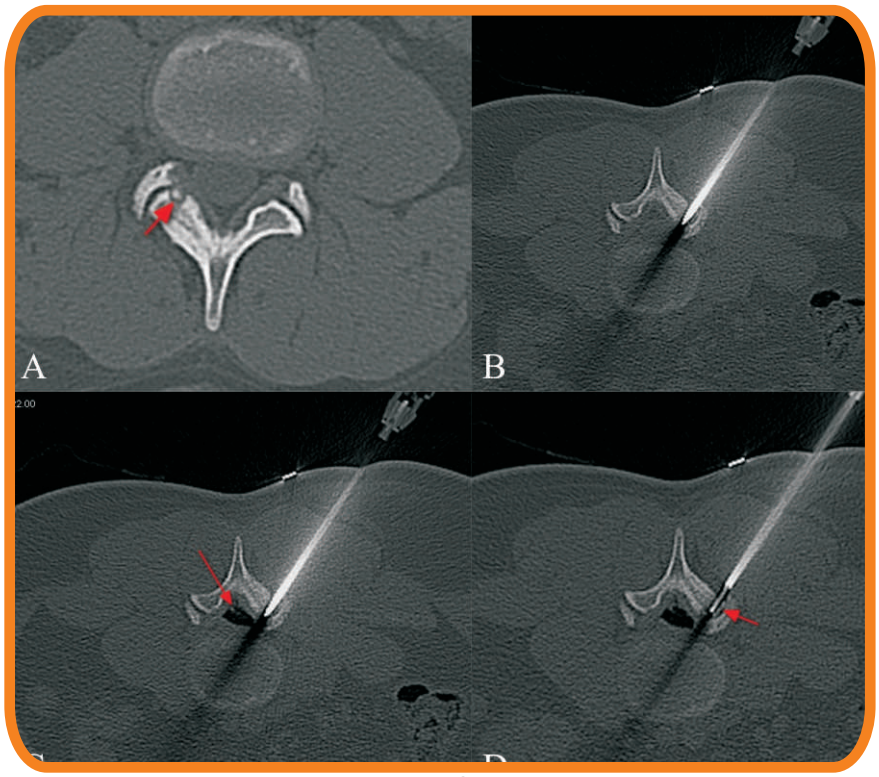

Fig. 3 (A-D): Supine axial CT scan (A) shows an osteoid osteoma (arrow) involving the right L3 lamina with very thin bone separating the lesion from the spinal canal. The needle was directed straight towards the spinal canal and thecal sac (arrow in B), since heating beyond the tip of the needle is far less than around it. Epidural air (arrow in C) was introduced to separate the thecal sac further from the lamina. The final position of the electrode prior to the ablation is shown (arrow in D). Post-ablation, the patient was pain free within 48 hours.

Fig. 3

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MKIS

Main Clinic
Bhaveshwar Vihar,
383, Sardar V. P. Road,
Mumbai - 400 004
Tel : 022-6617 3333.
Email :info@pds.piramal.com

Cardiac & Ultra fast CT scan
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Mumbai - 400 004
Tel : 022-2389-3551
Fax : 022-2382-9595

PET/CT
Piramal Diagnostics Building. Ground floor, Next to A to Z Ind. Estate, G K Marg, Off Worli Naka,
Lower Parel, Mumbai – 400 013.
Tel: 6615 4151, M: 97692 54151

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