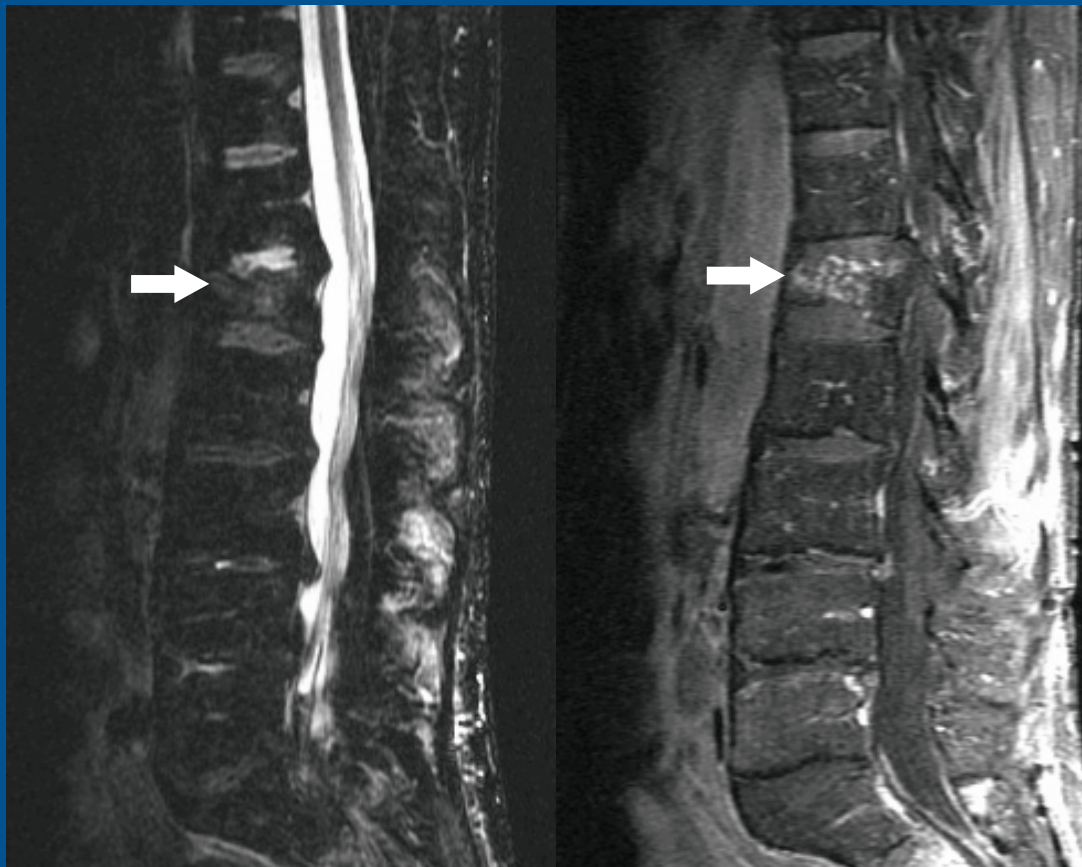


Biopsy and Vertebroplasty at the Same Time

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Need for both vertebral biopsy and vertebroplasty

Compression fractures can result from both osteoporosis and malignant tumors and a biopsy is often needed to determine the etiology.



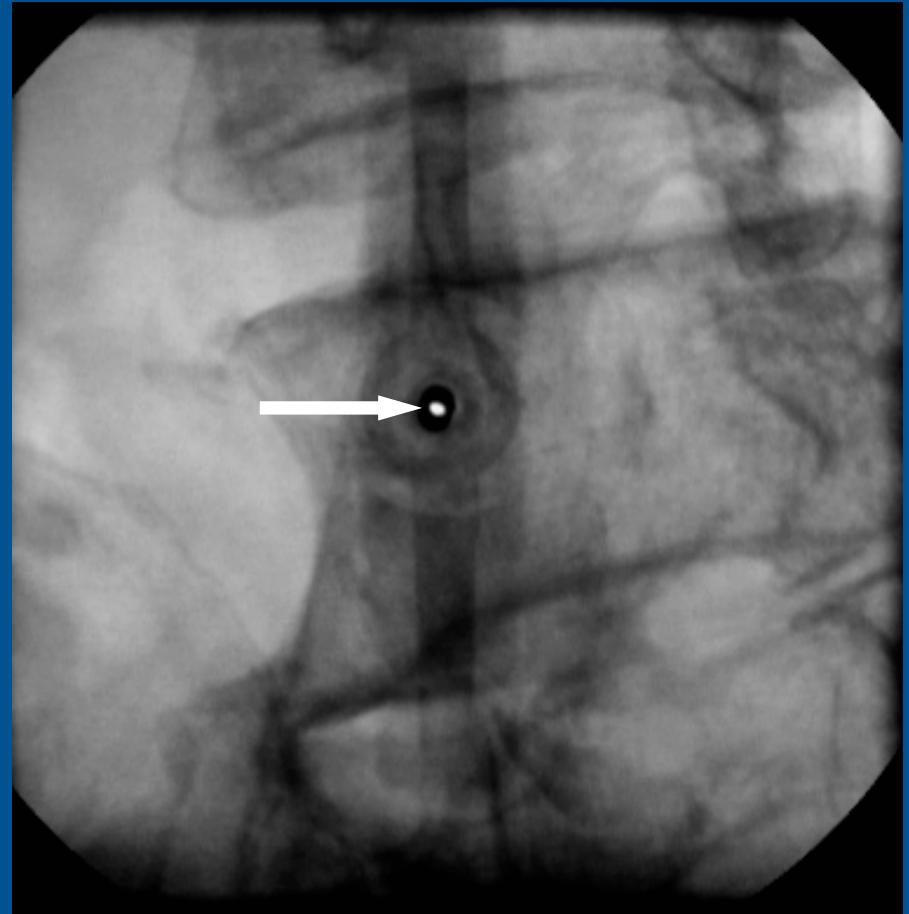
Set Up

We have developed a technique for combined bone biopsy and vertebroplasty. This is the typical set up for a bone biopsy and vertebroplasty.



Biopsy Technique

The patient is prone on a fluoroscopy table and the AP fluoroscopy tube aligned to show the pedicle en face and a 13-gauge 10cm Bone Biopsy needle is advanced into the pedicle. As soon as the needle tip is approaching the vertebral body the trocar is removed and the needle is further advanced to obtain the core biopsy.



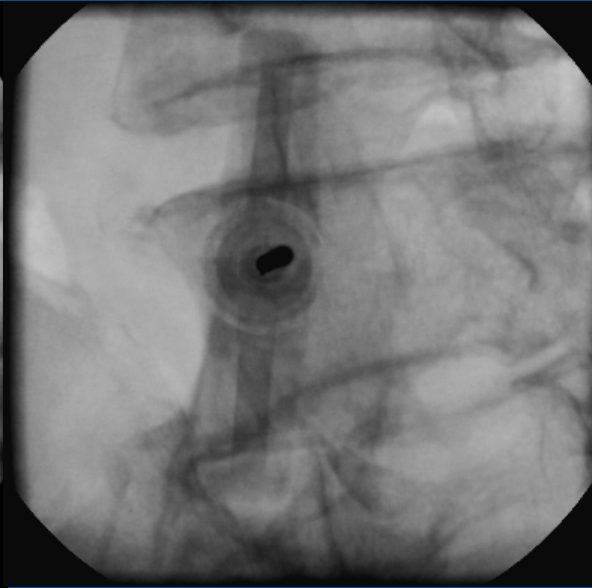
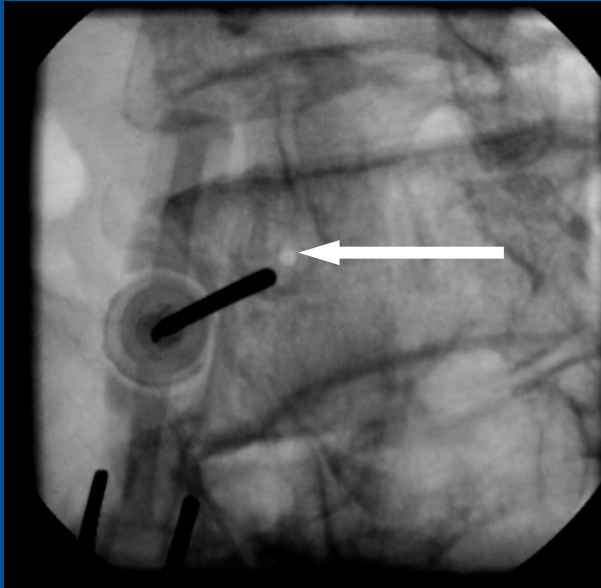
Fluoroscopy and tube alignment

After placing the Bone Biopsy needle the AP tube is aligned so that the needle lumen is seen en face (arrow).



Biopsy

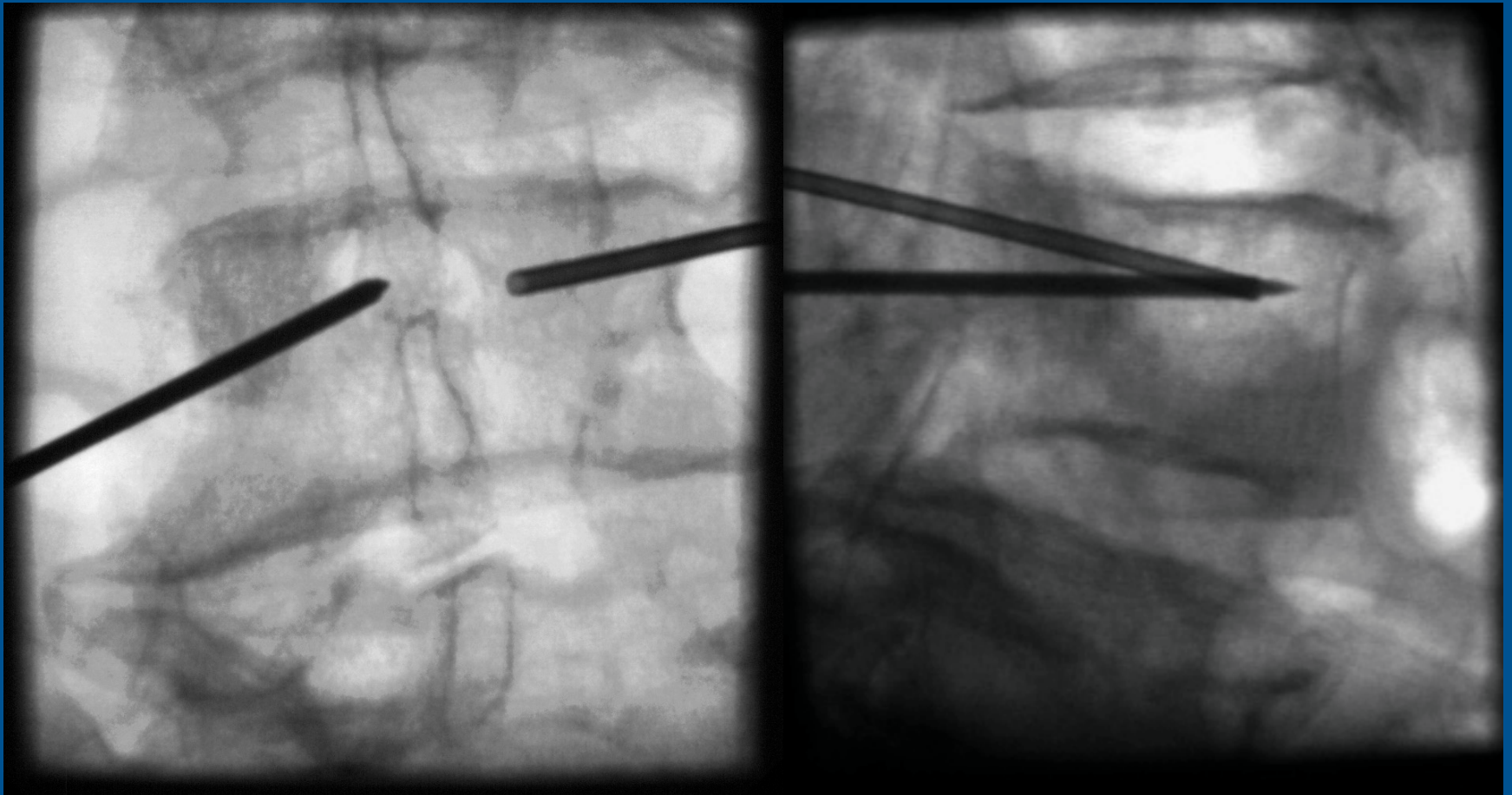
The needle is withdrawn with the core bone biopsy. The core is pushed out with the trocar and placed in formalin.



Crucial Step - Reinsertion of the needle in the same hole

The needle is now reinserted through the same needle tract (arrow). Without changing the tube alignment or the patient position, the needle is advanced through the soft tissues to the periosteum. Once you have found the old needle track (arrow) with the tip of the needle you can easily push the needle into to the vertebral body through the same tract without using the hammer.

The second needle is inserted on the right side if needed for the vertebroplasty.



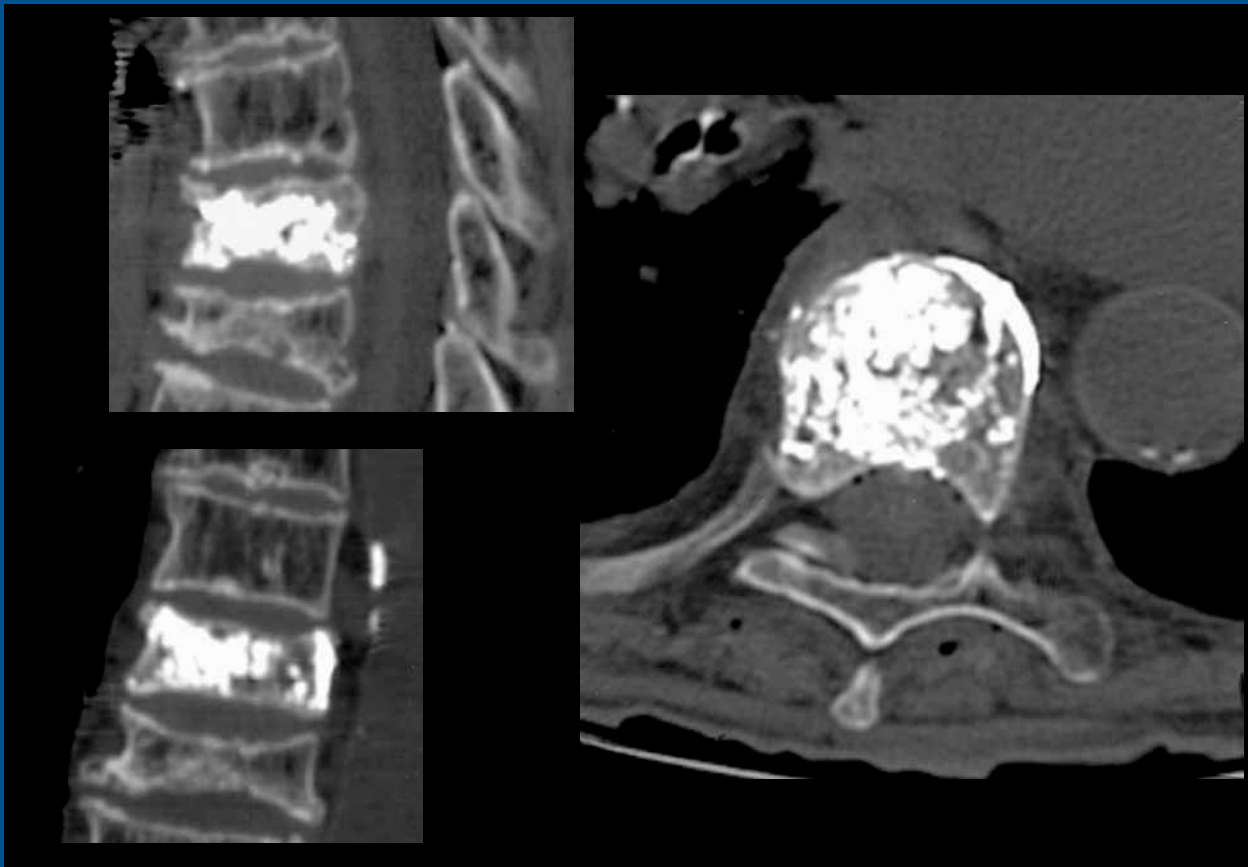
Vertebroplasty – needle placement

The position of the needles is confirmed in AP and lateral projections.



Vertebroplasty – cement injection

Cement is injected under fluoroscopic control.



Final Result

Good cement filling, increased height and the pain was reduced. The biopsy showed osteoporosis.

Conclusion

This technique useful for the patients who need a bone biopsy prior to vertebroplasty.

Only one hole is created which reduces the risk of cement leakage and the risk of neurological complications.

It is efficient for the patient and the operator to complete both procedures in one sitting.