

Spin echo (SE) and fast spin echo- inversion recovery (FSE-IR)

SE is the gold standard for all subsequent developments in terms of contrast.

Applications

- Anatomical imaging: T1W
- Pathology detection: T1W + contrast (Gd), T2W - disease tissue are more oedematous and/or vascular - higher signal on T2W
- T2 mapping

Advantages

It gives a good quality image and is a versatile technique. It gives true T2 weighting

- It employs inversion recovery with FSE acquisition
- It is primarily used for suppressing the signal from fat in abdominal cavity and while extremity imaging
- TI is the primary driver for the image contrast. TI time is 140 to 170 ms for fat suppression
- This is an excellent alternative to FSE Fat Sat for more uniform fat suppression and for large FOV or off-centre FOV

A case of Urinary Bladder Carcinoma

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"Spin echo (SE) and fast spin echo- inversion recovery (FSE-IR) are excellent techniques for abdominal cavity imaging"

Patient history

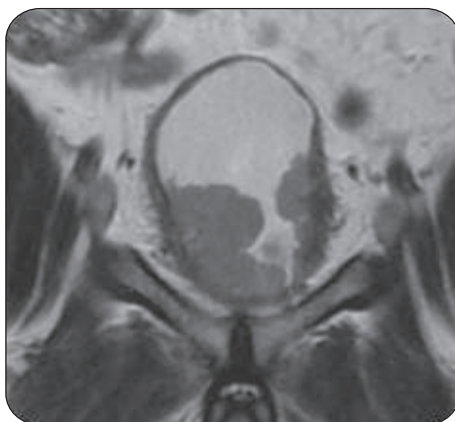
- Pain in the lower abdomen
- Haematuria

Technique & findings

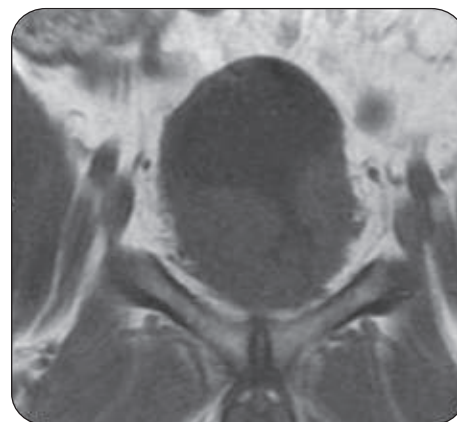
T2, STIR, T1 pre & post contrast fat sat imaging was performed. It was seen that the urinary bladder was normally distended with thickening of its wall along with an irregular mass involving almost entire bladder wall. Perivesical fat stranding was noted at multiple sites. Multiple lymph nodes were seen in the iliac and inguinal regions.

Provisional diagnosis

Carcinoma of urinary bladder

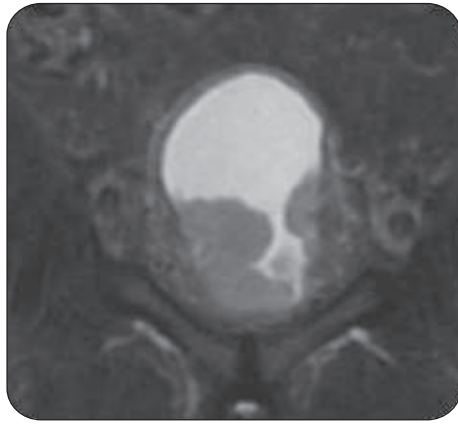


Coronal T2

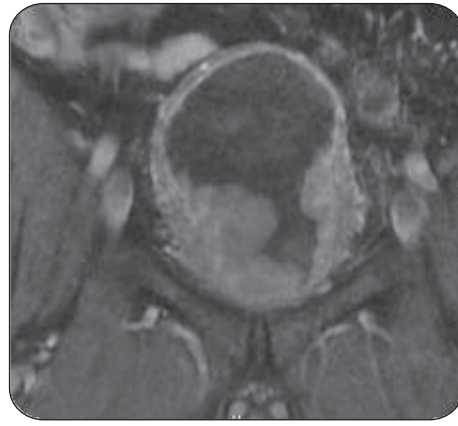


Coronal T1

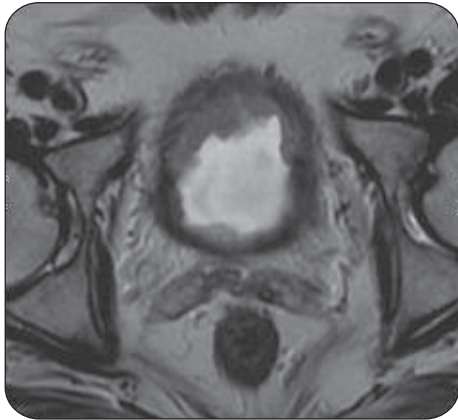




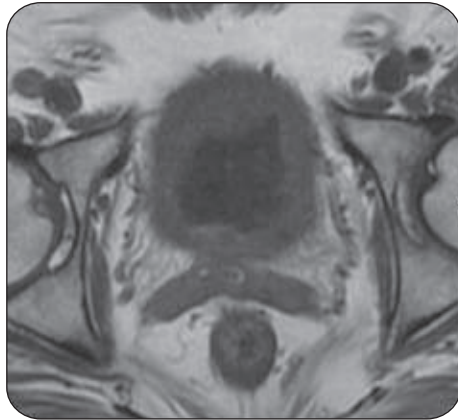
Coronal STIR



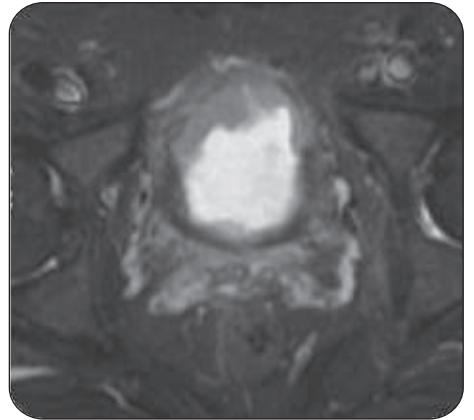
Coronal Post Contrast T1 FS



Axial T2



Axial T1



Axial STIR

Conclusion

SE and FSE-IR are beneficial for the diagnosis of tumours within the lower abdomen.

Image courtesy to Asiri Surgical Hospital

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imagination at work