



AP



Lateral

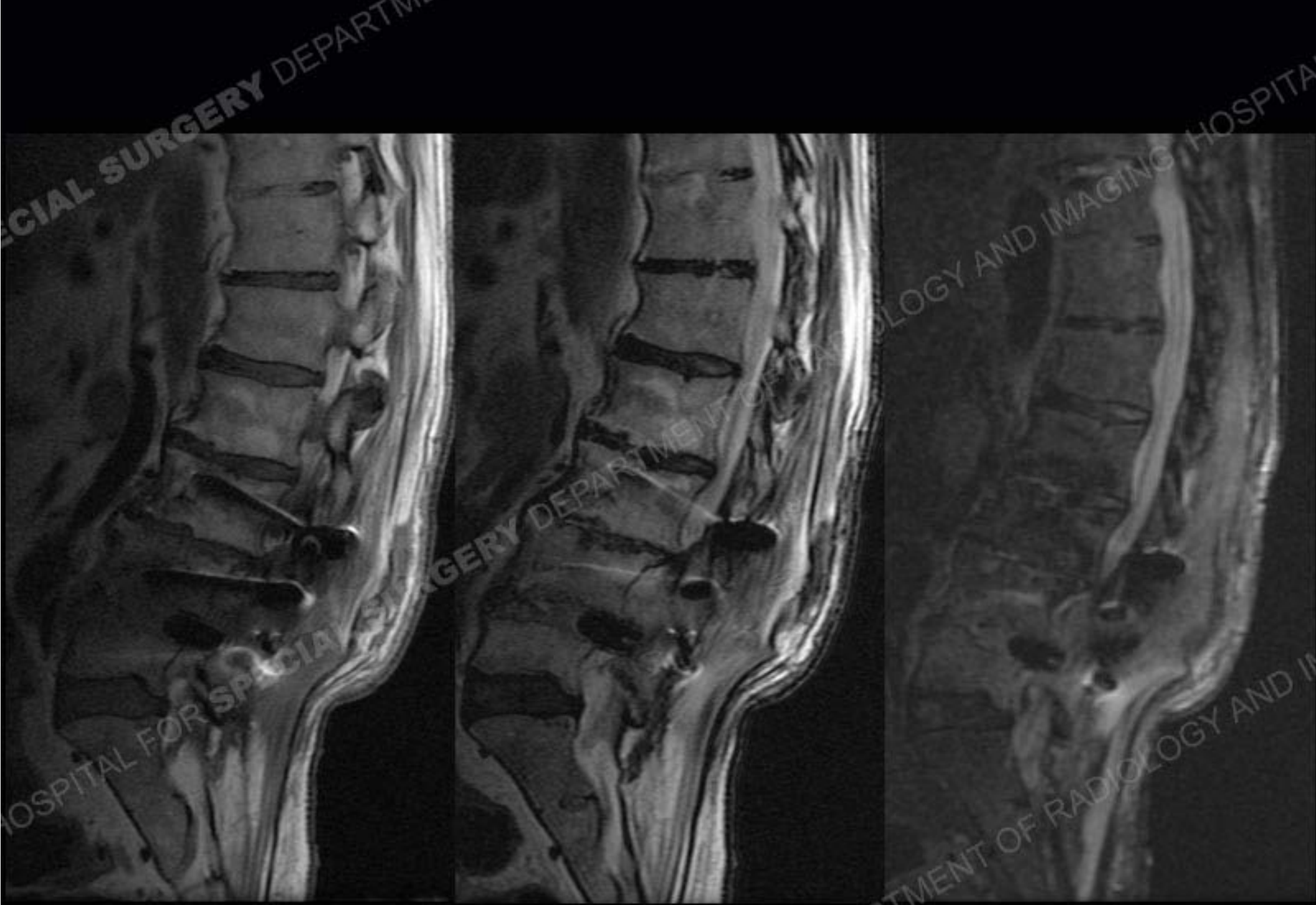


Flexion



Extension

History: 75 year old man with lumbar surgery performed at an outside facility in 1/2014. Now with low back pain, different than prior to the previous procedure.



T1

T2

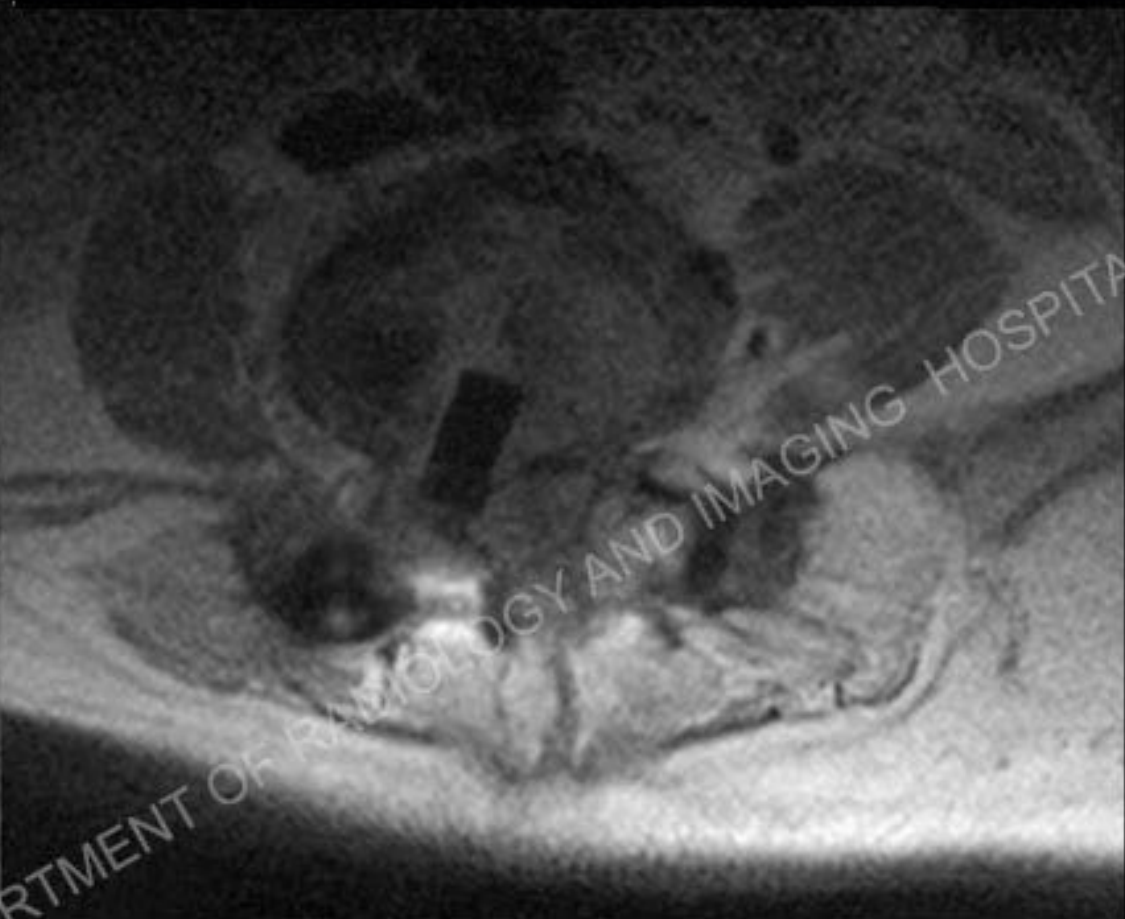
T3

All image from right paracentral location





Ax T2 at L4-L5



Ax PD MAVRIC at L4-L5



T1 Midline



T2 Midline

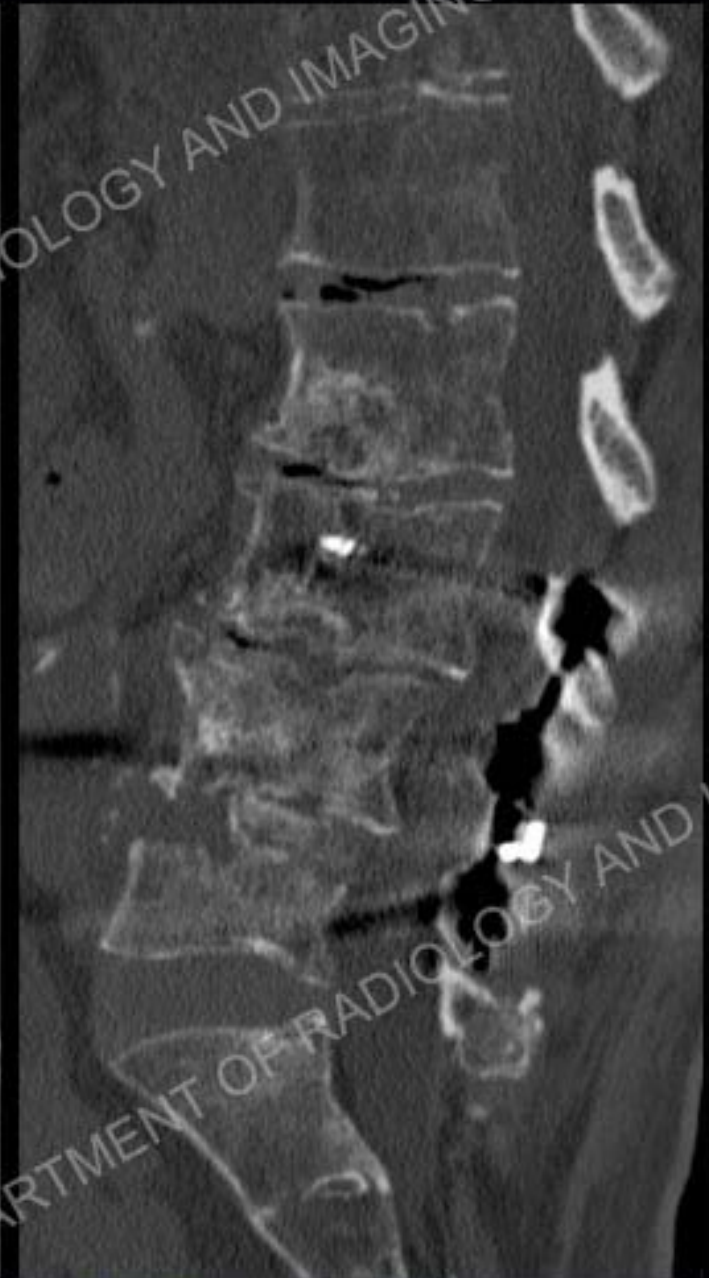




CT axial image at L4-L5  
CT sagittal reformation, right paracentral →



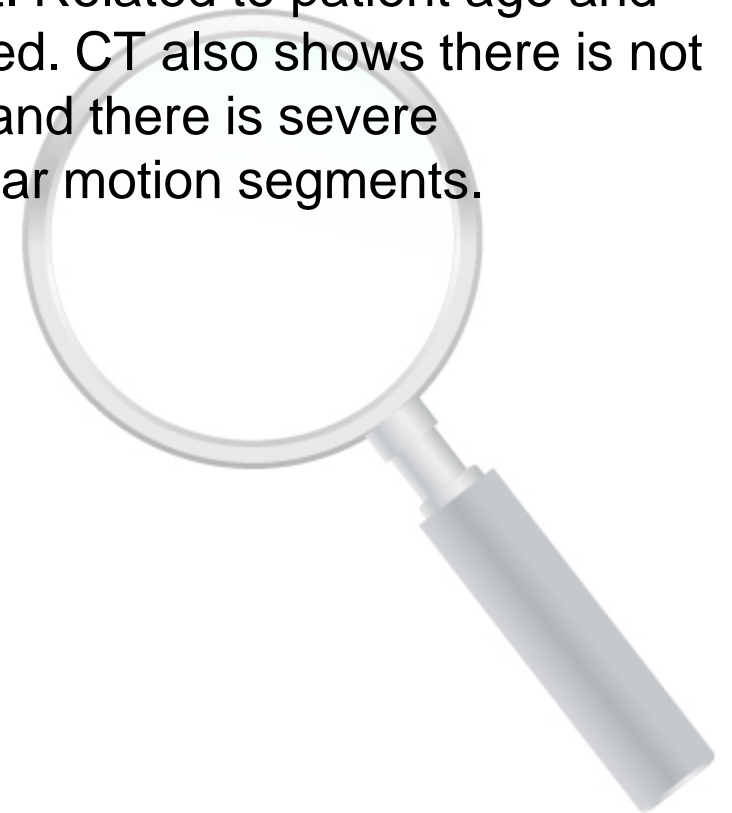
Coronal CT reformations



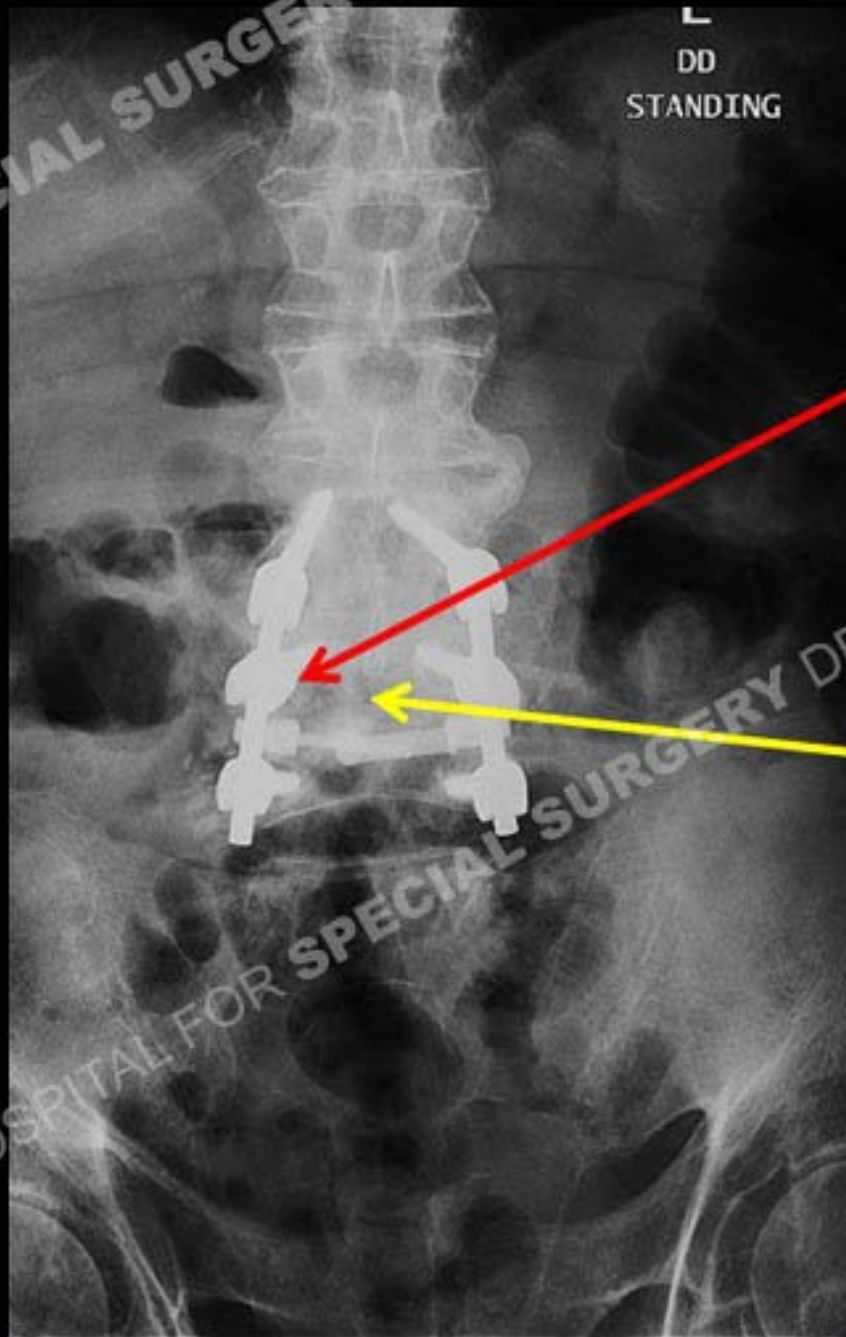
CT Sagittal Midline

## Findings

Radiographs demonstrate prior posterior fusion from L3-L5 and posterior decompression. No interbody fusion is identified and there is mild to moderate irregularity of the endplates of L4-L5. MRI and CT demonstrate posterior displacement of a right sided intervertebral cage at L4-L5 yielding impingement/compression of the traversing right L5 nerve root. The cage is radiolucent on the radiographs. A more prominent degree of irregularity is present of the endplates at L4-L5 on the cross sectional exams with marked edema pattern of the L4 and L5 vertebral bodies on the MRI. Postoperative changes of posterior decompression are present. Related to patient age and creatinine clearance no contrast was administered. CT also shows there is not complete destruction of the endplates at L4-L5, and there is severe degenerative disc disease of multiple other lumbar motion segments.

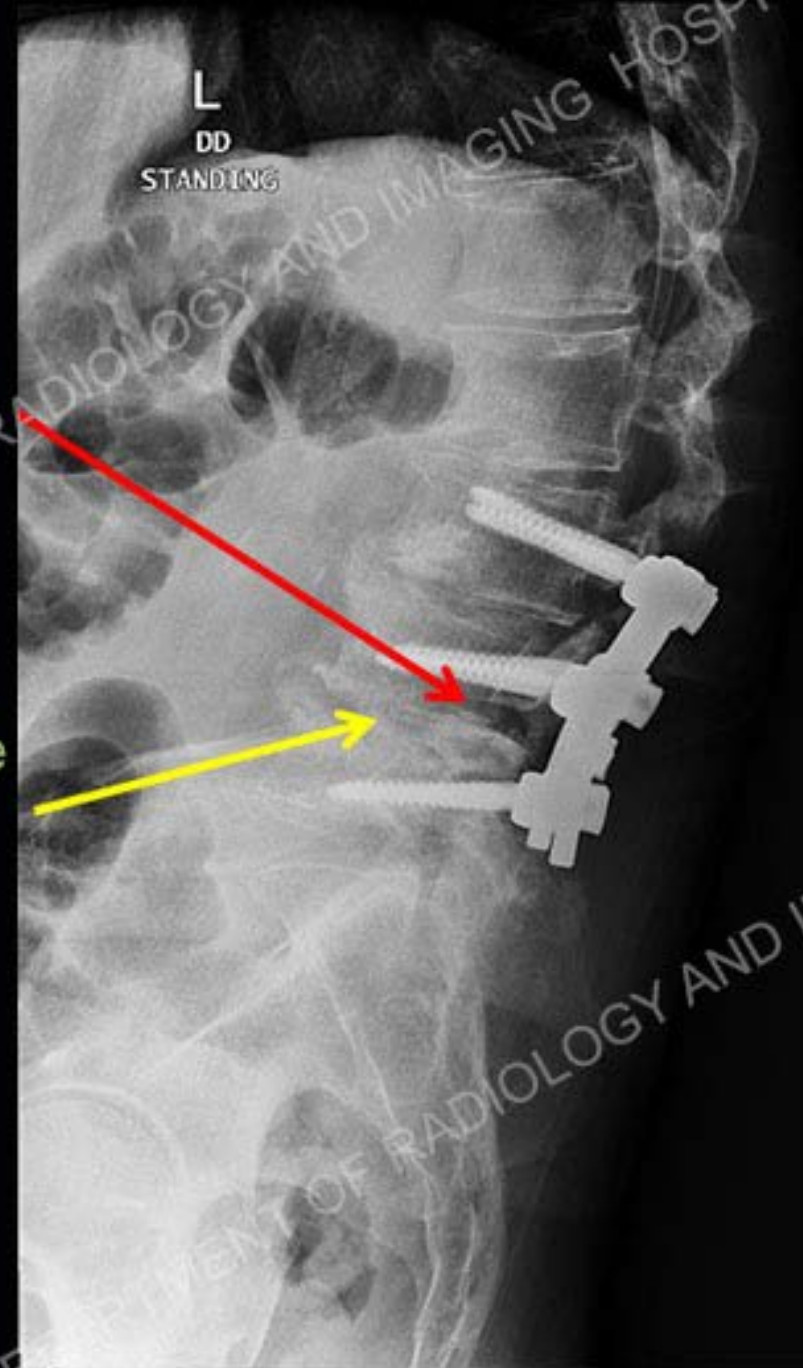




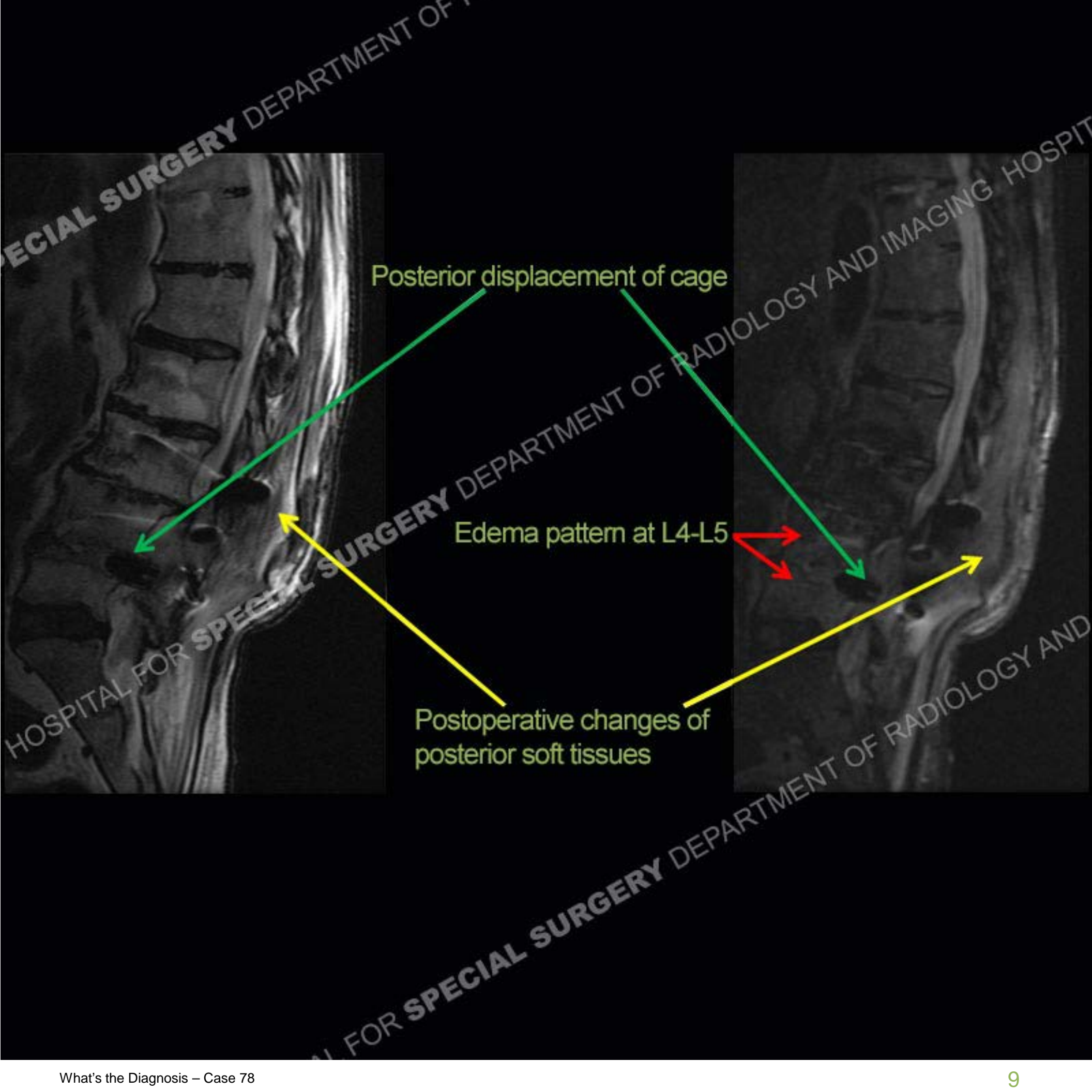


No cage visible

Mild to moderate  
Irregularity at  
Disc space







Posterior displacement of cage

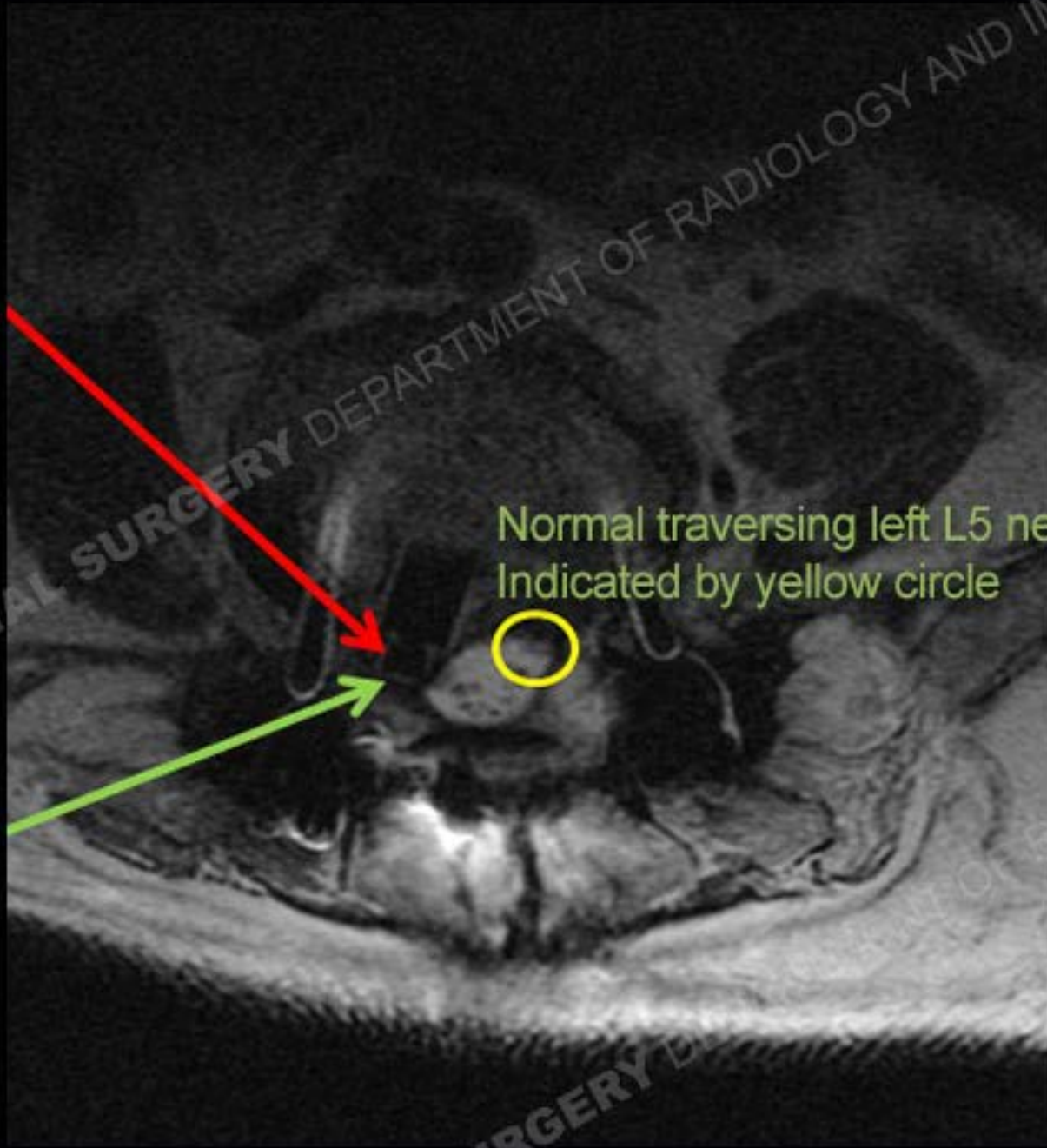
Edema pattern at L4-L5

Postoperative changes of posterior soft tissues

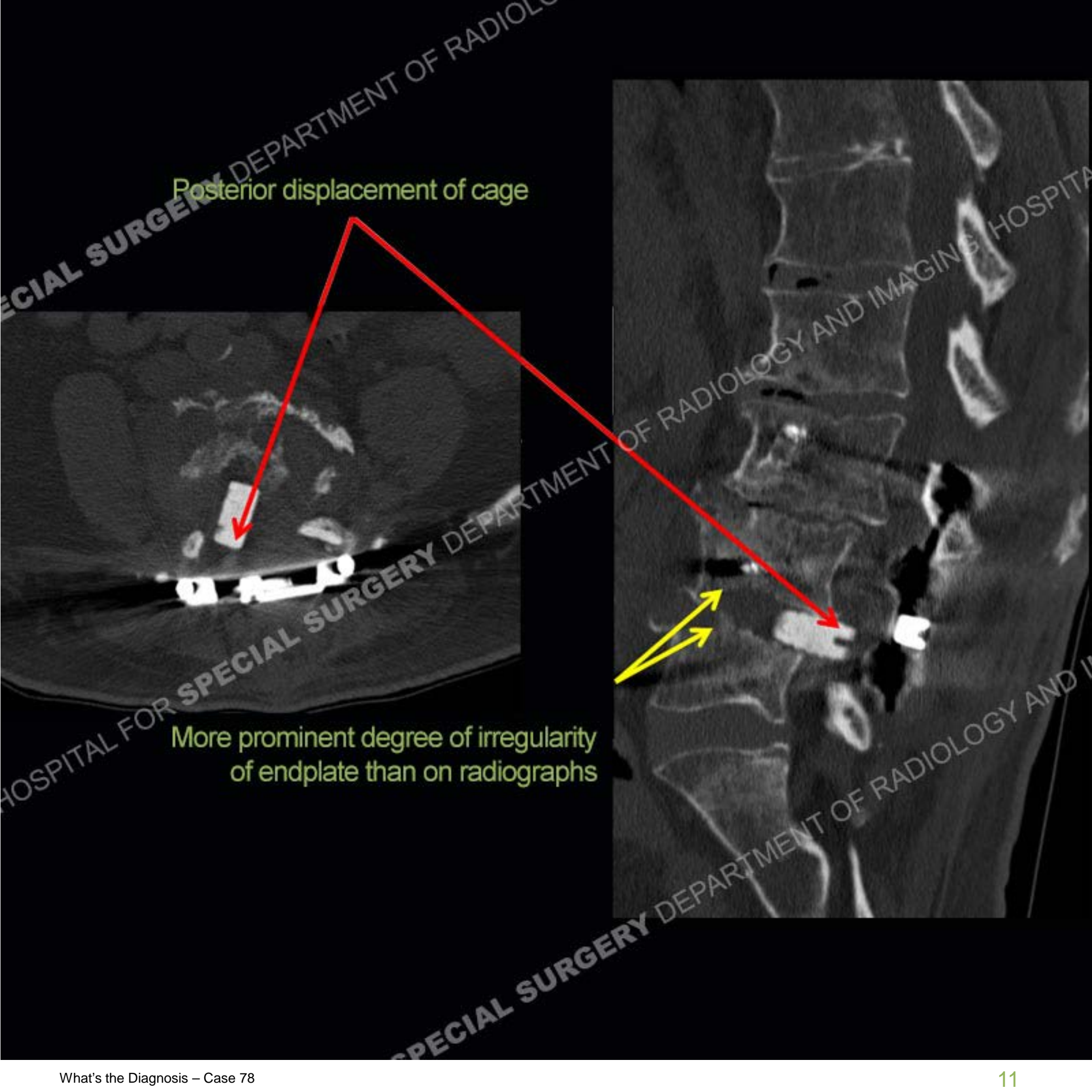
Posterior displacement of cage

Normal traversing left L5 nerve root  
Indicated by yellow circle

Compression at expected location of traversing right L5 nerve root







Posterior displacement of cage

More prominent degree of irregularity of endplate than on radiographs



Irregularity of endplates at L4-L5 but without complete loss/destruction





No intervertebral  
bony bridging

Extensive degenerative  
disc disease

## Diagnosis: Hardware Failure and displacement

In this case there has been a failure of incorporation of the intervertebral graft with no bony bridging across the disc space and posterior displacement yielding mass effect upon the traversing right sided nerve root. Related to the prior posterior decompression and lack of graft fixation there has been increased load transmitted to the L4-L5 segment causing a breakdown with marked irregularity of the endplates. The marked edema at L4-L5 and irregularity of the endplates would question infection. However, the preservation of a large area of the endplates and no associated paravertebral collection argues against infection.

In this instance serological markers were obtained and were not suspicious of infection, nor was there an overall clinical suspicion. The inability to see the carbon fiber cage on the x-rays is because they are radiolucent but can be seen on MRI and CT. Our surgeons use cages with metallic beads so that the cages can be identified on x-ray and their position can be evaluated on x-ray. In this case, revision surgery was performed with removal of the posterior displaced cage and with anterior and posterior fusion performed from L2-S1 with additional iliac fixation.



## Intraoperative Spot images



Special thanks to Alex Hughes, MD for his assistance in this case presentation