Double cervical expandable cage reconstruction after nerve root sparing thoracic vertebral column resection in a patient with severe vertebral body height collapse.

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Disclosures:

- None
Management of spinal pathology with severe retropulsion or anterior cord compression frequently requires anterior decompression and reconstruction such as vertebral corpectomy.

Thoracic corpectomy with regular cage reconstruction can be very challenging without ligation of the lower thoracic nerve roots especially when there is significant vertebral body height collapse.

Ligation of the lower thoracic nerve roots is not always benign and can lead to severe complications related to vascular injury (artery of Adamkiewics on the left) and risk for abdominal pseudohermia on the right side.
Methods:

- We present a case of a 72-year-old woman with severe mechanical back pain secondary to multiple myeloma. She had a prior T10-L1 vertebroplasty and developed significant collapse of her T12 vertebral body with kyphosis and retropulsion into the canal and cord compression.

- The patient was taken to the OR for a T9 to L3 posterior instrumented fusion with T11 - T12 laminectomy and extracavitary T12 vertebral column resection (VCR) with ventral cage reconstruction with expandable cage placement and sagittal plane deformity correction.

- Due to the patient’s severe collapse we would be unable to place a thoracic sized cage without tying off her lower T12 and potentially the T11 nerve roots. We therefore attempted to perform a nerve root sparing VCR using two cervical sized expandable cages.

- Given the smaller size of the cervical cages we decided to use two of them to avoid cage subsidence.
Results:

- The patient VCR was successfully reconstructed with two cervical sized expandable cages and the lower thoracic nerve roots spared avoiding possible related complications.
Results:

Figure 1 (a and b): Intraoperative, AP and lateral thoracolumbar XRs demonstrating the final construct with anterior column reconstruction utilizing two cervical sized cages to spare the lower thoracic nerve roots and avoid subsidence.
Discussion/Conclusions:

- A nerve root sparing VCR can be exceedingly challenging when there is significant vertebral body collapse.

- Using cervical expandable cages allows for appropriate anterior column correction while sparing the nerve roots.

- We recommend using two cervical cages for that purpose given the size of the thoracic endplates and risk for cage subsidence.