The incidence of the 11th Rib & an Example of an implication in Spine surgery

Gabriel Gonzales-Portillo, BS
Travis Dumont, MD
I DO NOT have any financial or organizational relationships with commercial interests or other entities. I hereby certify that to the best of my knowledge, no aspect of my current personal or professional circumstances places me in the position of having a conflict of interest with my duties, responsibilities and exercise of independent judgement as a representative of AANS.
INTRODUCTION

- The incidence of 11 ribs is not currently documented in current literature
- The incidence of 11 ribs may have a substantial impact on spinal procedures and outcomes
- A case in which a 33-year-old male with spinal cord compression symptoms due to a spinal abscess underwent decompression surgery illustrates such importance. The surgeons counted vertebrae up from T11 instead of T12, not realizing that the patient, in fact, had 11 ribs. As a result, the patient was inadequately decompressed, his status deteriorated, and he required revision surgery as MRI showed compression of the thoracic spinal cord inferior to the prior laminectomy.
A retrospective review was conducted of patients presenting with thoracolumbar fractures at the emergency department between 2017 and 2018.

Sagittal CT scans from 234 patients were obtained and analyzed by counting the number of ribs.
Out of 234 patients who were consulted by spine specialists, 8 patients had 11 ribs (3%).
CONCLUSIONS

- Spine specialists should consider the possibility of numeric variation of ribs when evaluating thoracolumbar spine imaging.
- The above-mentioned case demonstrates an implication that can occur when not considering rib variation, and this could theoretically be a factor as much as 3% based on our data.
- Given such high 11 rib incidence rate, surgeons should always examine the patient for the rib variance before performing spinal procedures.