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ASSESSMENT OF IMPACT OF LONG-CASSETTE STANDING X-RAYS ON SURGICAL PLANNING FOR CERVICAL PATHOLOGY: AN INTERNATIONAL SURVEY OF SPINE SURGEONS

Introduction/Aims

A recent study demonstrated that long-cassette x-rays can have significant impact on surgical planning for lumbar pathology. It remains unclear whether long-cassette x-rays may be similarly impactful for cervical pathology, especially since some cervical pathologies may be directly related to the TL spine.

Methods

This was an international on-line survey of spine surgeons. A series of 15 cases of cervical pathology were presented with a brief clinical vignette and cervical imaging (x-rays and MRI/CT). Surgeons were then asked to select the most appropriate surgical plan, with 6 choices, ranging from least aggressive (cervical anterior-only approach with discectomy/corpectomy at one or more levels and fusion; 1 point) to the most aggressive (posterior 3-column osteotomy at or below mid-thoracic region with T/L fusion; 6 points). Cases were then reordered and presented with long-cassette standing x-rays and the same surgical planning question. Results were compared based on cervical imaging only vs addition of long-cassette x-rays using a two-tailed paired t-test. 5 cases (control group) had normal global alignment and 10 cases (study group) had global malalignment.

Results

157 surgeons completed the survey, predominantly from North (28%) or South (36%) America and Asia (15.6%). Specialties included orthopedic surgery (62%) and neurosurgery (38%), 79% completed spine fellowship, and responders had a mean 14 yrs in practice that was a mean of 78% spine (32% cervical) and 21% deformity. For study cases, extent of recommended surgery increased significantly with addition of long-cassette x-rays vs cervical imaging only ($p=0.003$). For control cases, no significant changes in surgery plans were identified with addition of long-cassette x-rays ($p=0.106$).

Discussion and Conclusions

Similar to the results seen with lumbar pathologies, long-cassette x-rays can have significant impact on surgical planning for cervical pathology. Failure to account for global spinal alignment and pathologies in other spinal regions when addressing what appears to be isolated cervical pathology can have negative consequences. Surgeons should maintain a relatively low threshold for obtaining long-cassette standing x-rays when planning surgical treatment for significant cervical spine pathology.