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“Cervical Osteomyelitis in the Setting of Multiple Comorbidities: A Complex Anatomical Approach”

Background: Vertebral osteomyelitis, otherwise known as spinal osteomyelitis or spondylodiscitis, is a rather rare yet serious disease comprising 3-5% of all osteomyelitis cases, with only 3-6% of this subset affecting the cervical spine. Risk factors for the condition include advanced age, diabetes, immunosuppression, and IV drug use. The incidence of vertebral osteomyelitis has increased over recent decades, with high-risk patients experiencing higher mortality rates. Treatment guidelines for vertebral osteomyelitis are not standardized and rely on physician preference, often starting with IV antibiotics and progressing to surgery, if necessary.

Case Presentation: A 54-year-old female with tracheostomy-dependent obesity hypoventilation syndrome, hypertension, and morbid obesity presented with upper back pain after falling. Imaging revealed early C6-C7 discitis/osteomyelitis, which was initially managed conservatively with IV antibiotics. Her condition worsened, leading to anterior corpectomy of C6-C7 with tracheostomy in place, followed by posterior cervical fusion from C5 to T2 the sitting position. This approach was chosen due to the patient's complex anatomy and tracheostomy.

Conclusion: This case underscores the need for unique surgical approaches in high-risk patients with complex anatomies as it is the first cited cervical osteomyelitis case utilizing anterior corpectomy and debridement with tracheostomy dependent obesity hyperventilation syndrome followed by a posterior cervical fusion in the sitting position. It highlights the importance of interdisciplinary care when managing vertebral osteomyelitis, especially in patients with multiple comorbidities. Given the increasing rates of morbid obesity, this case provides valuable insights for neurosurgical decision-making in similar future cases.