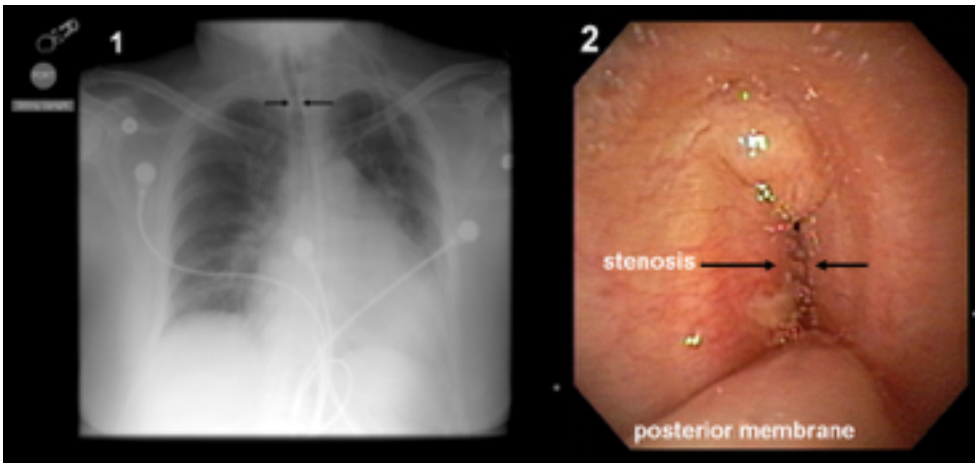
Clinical case 15: Evaluation and treatment of post-intubation tracheal stenosis

An 86 year old woman with a history of stroke required prolonged endotracheal intubation and percutaneous dilatational tracheostomy. Later, she was decanulated and sent to a nursing home where her stoma healed satisfactorily. She now presents with respiratory failure requiring intubation. Congestive heart failure is diagnosed and treated. Minutes after extubation has stridor requiring reintubation. Three days later she is again extubated but increasing work of breathing and stridor are noted. History includes congestive heart failure, hypertension, moderate dementia and residual hemiplegia from her stroke. She follows commands when spoken to. SaO2 is 95%. Karnofsky is 50, ASA score is 3, and all laboratory data are normal. She has one daughter who rarely visits, but says she enjoys watching television and eating. The radiograph reveals hour glass configuration of the upper tracheal, cardiomegaly and pulmonary vascular congestion. Bronchoscopy reveals a severe triangular stomal stricture 3 cm below the vocal cords. During expiration the tracheal lumen is narrowed by 100%.



After addressing items of the four boxes, briefly respond to the following questions:

1. Describe THREE qualitative features of post-intubation tracheal stenosis.
2. Describe THREE diagnostic modalities other than bronchoscopy to assess severity, extent, and morphology of a this patient's tracheal stricture.
3. Describe FOUR therapeutic alternatives for patients with tracheal stenosis.
4. Describe THREE stricture characteristics that determine need and type of treatment.