
Introduction

• Percutaneous tracheotomy is considered a safe and cost-effective alternative to open surgical tracheostomy in certain patients
• Percutaneous tracheotomy may have fewer immediate complications1–3
• Tracheal/subglottic stenosis occurs more frequently as a late complication after percutaneous tracheotomy, in up to 50%4–6
• Most studies evaluating incidence of stenosis only include those who were successfully decannulated, so true incidence unknown
• Stenosis may develop from prolonged intubation prior to tracheotomy, high cuff pressures, tracheal back wall injury or anterior cartilage fracture at the time of the procedure (Figure 1)

Case #1

• 47yo smoker with a gunshot wound to her thorax.
• Percutaneous tracheotomy performed at another institution after 3 weeks of intubation
• She never tolerated a speaking valve
• Tracheoscopy and CT (Figure 2) identified 1cm segment of complete, firm stenosis just above the stoma
• Underwent tracheal resection of the segment with decannulation
• Required 2 subsequent endoscopic debridements of partially obstructive granulation at the anastomosis
• Achieved an adequate voice and ability to perform all ADLs

Figure 2. Sagittal CT with 1cm of soft tissue stenosis above the stoma

Conclusions

• We must remain aware of the risk of subglottic/tracheal stenosis after percutaneous tracheotomy, even in the absence of a prolonged intubation
• Long-term as well as short-term risks should be considered when comparing surgical vs. percutaneous tracheotomy
• Reduced ability to communicate without phonation (hand impairment, vision impairment, illiteracy) should be considered when weighing the risk of potential stenosis after tracheotomy
• Tracheal resection of tracheotomy related stenosis can be effective for phonation and decannulation
• Close monitoring and debridement post-ressection are important to prevent restenosis

References