

26307 - AIRWAYS AND VENTILATION IN TRAUMATIC AIRWAY INJURY PATIENTS: DOUBLE JEOPARDY!

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INTRODUCTION: Trauma patients are all potentially difficult airways because of their full stomachs, uncleared cervical spines, and the urgency of the situation. Obtaining a patent airway and adequate ventilation can be particularly challenging in patients with traumatic airway injuries (TAI). However, there is a paucity of data available about the incidence of airway compromise, ventilation problems, special techniques used and outcome in these patients.

METHODS: This study was approved by the Research and Ethical Boards of the hospital. A database search followed by a chart review of all patients with TAI treated in a Level 1 Trauma Center from Jul 1989 to Jun 2005 was performed.

RESULTS: Among the 12,187 trauma patients attended, 104 (0.9%) were recognized as TAI in the study period (36 cases: Blunt trauma; 68 cases: Penetrating trauma). A total of 100 (96%) patients required a definitive airway (DA) during their treatment. Among patients with TAI, 32 patients received a DA in field/transport, 22 at the referring hospital and 16 patients received DA as part of the first assessment at this Institution. In total, 70 patients (67%) required emergent DA in field or hospital. The most frequent method was orotracheal intubation, but intubation through the wound (WTT - 9 cases), surgical airways (10 cases) and intubation under fiberoptic bronchoscopy (11 cases) were also used. Injuries to the upper airway (UAI) predominated (90 patients - 87%). The mortality rate of the patients who received DA in field was higher (60% vs. 0% - $p < 0.05$) than the patients intubated in the operating room ($p < 0.05$). The mortality rate was higher in patients with lower airway injuries (LAI) than in patients with UAI (64% vs. 17% - $p < 0.05$). Analyzing the 24 deaths, 10 were considered mainly caused by the TAI. In these cases, there was difficulty in obtaining a DA in 3 cases (all UAI), and ventilation difficulties in 7 cases (all LAI).

DISCUSSION: The incidence of TAI is low, being more common after penetrating trauma. The early assessment of airways is crucial and DA was required emergently in 2/3 of the patients with TAI. Alternative techniques for obtaining DA included WTT, surgical airway and intubation under fiberoptic bronchoscopy. Lower airway injuries have higher mortality than UAI. Even though most patients died as a result of their other injuries, causative factors in UAI patients included difficulty in obtaining DA, and ventilation/oxygenation problems were contributory in LAI patients.

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