

Internal carotid artery injury during endonasal sinus surgery: review of literature and management guideline proposal

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ABSTRACT

Background: Although iatrogenic internal carotid artery injury (ICA) is uncommon, it is a catastrophic complication of endonasal sinus surgery (ESS). Currently, there is no standard protocol for its emergency management. **Objectives:** To study the incidence of ICA injury during ESS, conduct literature review and propose protocol guidance for its emergency management. **Methods:** Retrospective review of medical records of patients who underwent ESS in Universiti Kebangsaan Malaysia Medical Centre (UKMMC) from January 1997 to July 2015. Besides, literature search on intra-operative ICA injury was conducted. **Results:** Out of 4,507 patients who underwent ESS during the study period in UKMMC, only one had intra-operative ICA injury (0.02%). A total of 26 case reports were found on literature review. Majority of the patients (14/22) had endovascular intervention either coiling embolization, balloon occlusion or stent placement. Muscle-fascia patch grafts of sphenoid sinus were associated with high incidence delayed pseudoaneurysm formation, which eventually required endovascular intervention. There were six cases (23.1%) of reported mortality. Seven patients (26.9%) had neurological complications post-intervention, five (19.2%) were permanent. Nine patients (34.6%) developed carotid pseudoaneurysm, of which five were delayed in onset. **Conclusions:** The low incidence of ICA injury during ESS in UKMMC is consistent with the results of other studies in literature. Immediate nasal packing followed by urgent angiography and endovascular stent placement is the least invasive definitive treatment. If stenting was unsuccessful, endovascular balloon occlusion or coil embolization is the next preferred treatment, provided adequate cross-cerebral circulation. The success of the management relies on multidisciplinary collaboration.

Laryngeal deviation: idiopathic and acquired laryngeal deviation

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ABSTRACT

Introduction: Laryngeal deviation is defined as the displacement of the larynx or anterior commissure. The patients can be asymptomatic or present with hoarseness or dyspnoea. It can be classified into acquired or idiopathic. **Case Report:** We report two cases of laryngeal deviation in Sungai Buloh Hospital in which both of them presented with hoarseness. Both of the patients are more than fifty years old and have right laryngeal deviation. The provisional diagnosis was supraglottic tumour as the scope showed prominence of the left false cord which mimicked submucosal tumour. However, imaging performed showed otherwise. **Discussion:** Laryngeal deviation can be caused by several underlying pathologies such as old tuberculosis, cervical spondylosis, and cervical or thoracic surgery. It is reported that most of the idiopathic laryngeal deviation cases were male over fifty years old with right side laryngeal deviation. The cause of right deviation predominance is speculated due to tethering effect of the arch of aorta towards the trachea. The problem which is associated with laryngeal deviation is left false vocal cord protrusion which appears like submucosal tumour of larynx or hypopharynx. Erosion of the thyroid cartilage, which was present in case two, might be due to primary laryngeal carcinoma or post-traumatic injury. Computed tomography and magnetic resonance imaging are diagnostic tools to identify underlying pathologies such as masses at the larynx or hypopharynx. **Conclusion:** Problem that may arise in these cases is the dilemma of making a correct diagnosis as deviated larynx caused protrusion of false cord, which mimics a submucosal tumour. Difficult intubation must be anticipated if these patients were to undergo general anaesthesia.