

## Oropharyngeal Dysphagia after Anterior Cervical Spine Surgery: A Review

Study Design    Review.

**Objective**        Postoperative oropharyngeal dysphagia is one of the most common complications following anterior cervical spine surgery (ACSS). We review and summarize recent literature in order to provide a general overview of clinical signs and symptoms, assessment, incidence and natural history, pathophysiology, risk factors, treatment, prevention, and topics for future research.

**Methods**        A search of English literature regarding dysphagia following anterior cervical spine surgery was conducted using PubMed and Google Scholar. The search was focused on articles published since the last review on this topic was published in 2005.

**Results**        Patients who develop dysphagia after ACSS show significant alterations in swallowing biomechanics. Patient history, physical examination, X-ray, direct or indirect laryngoscopy, and videoradiographic swallow evaluation are considered the primary modalities for evaluating oropharyngeal dysphagia. There is no universally accepted objective instrument for assessing dysphagia after ACSS, but the most widely used instrument is the Bazaz Dysphagia Score. Because dysphagia is a subjective sensation, patient-reported instruments appear to be more clinically relevant and more effective in identifying dysfunction. The causes of oropharyngeal dysphagia after ACSS are multifactorial, involving neuronal, muscular, and mucosal structures. The condition is usually transient, most often beginning in the immediate postoperative period but sometimes beginning more than 1 month after surgery. The incidence of dysphagia within one week after ACSS varies from 1 to 79% in the literature. This wide variance can be attributed to variations in surgical techniques, extent of surgery, and size of the implant used, as well as variations in definitions and measurements of dysphagia, time intervals of postoperative evaluations, and relatively small sample sizes used in published studies. The factors most commonly associated with an increased risk of oropharyngeal dysphagia after ACSS are: more levels operated, female gender, increased operative time, and older age (usually >60 years). Dysphagic patients can learn compensatory strategies for the safe and effective passage of bolus material. Certain intraoperative and postoperative techniques may decrease the incidence and/or severity of oropharyngeal dysphagia after ACSS.

**Conclusions**    Large, prospective, randomized studies are required to confirm the incidence, prevalence, etiology, mechanisms, long-term natural history, and risk factors for the development of dysphagia after ACSS, as well as to identify prevention measures. Also needed is a universal outcome measurement that is specific, reliable and valid, would include global, functional, psychosocial, and physical domains, and would facilitate comparisons among studies. Results of these studies can lead to improvements in surgical techniques and/or perioperative management, and may reduce the incidence of dysphagia after ACSS.

## 前路頸椎手術後吞嚥困難：回顧

### 研究設計 回顧

**目的** 術後吞嚥困難是前路頸椎手術（ACSS）最常見的併發症之一。我們回顧並總結最近的文獻以提供臨床徵狀和症徵，評估，發病率和自然歷史，病理生理學，風險因素，治療，預防和今後研究的主題。

**方法** 使用 PubMed 和谷歌學術進行搜索關於前路頸椎手術後吞嚥困難的英文文獻。搜索集中於自 2005 年關於這主題的一次回顧公佈後出版的文章。

**結果** 在 ACSS 後出現吞嚥困難的患者，他們的吞嚥生物力學顯著改變了。患者的病史，體格檢查，X-射線，直接或間接喉鏡檢查，並以錄像放射吞嚥評估被認為是主要評估吞嚥困難的方式。沒有一個普遍接受的客觀工具去評估 ACSS 後吞嚥困難，但最廣泛使用的工具是 Bazaz 吞嚥困難評分。因為吞嚥困難是一種主觀感覺，以患者報告的工具似乎更多的臨床相關，更有效地識別功能障礙。ACSS 後吞嚥困難的原因是多方面的，涉及神經，肌肉和粘膜結構。這種狀況通常是短暫性的，通常在術後早期開始，但有時手術後 1 個月以上才開始。ACSS 後一周內出現吞嚥困難的發病率在文獻中是由 1 至 79 % 的。這個較大的誤差可以歸因於外科手術技術，手術的程度，以及所使用的植入物的大小的不同，以及定義和測量吞嚥困難的差異，術後評估的時間間隔，並在已發表的研究中使用相對小的樣本。最常見與 ACSS 後吞嚥困難風險增加的因素有：需於多個節段進行手術，女性，增加了手術時間，和年齡較大（通常 > 60 歲）。吞嚥困難的患者可以學習以補償性的策略讓食物安全及有效的通道。某些術中和術後的技術可減少 ACSS 後吞嚥困難的發生率和/或嚴重程度。

**結論** 需要以大型，前瞻性，隨機式的研究確認的發展 ACSS 後吞嚥困難發病率，患病率，病因，機制，長期的自然史和風險因素，以及找出預防措施。還需要的是一個通用的結果測量，是特定的，可靠的和有效的，包括全球性，功能性，心理和物理領域，並有助於研究之間的比較。這些研究的結果可以達到改善手術技術和/或圍手術期管理，或可以減少 ACSS 後吞嚥困難的發病。