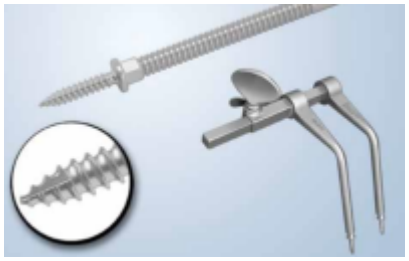
Caspar cervical distractor system



Symptomatic cervical hematoma (CH) after cervical spine surgery through an anterolateral approach is a feared complication. In up to 60% of CH cases, no source of bleeding is detected during drainage. Bleeding from the pinholes of the Caspar distractor is a known complication, briefly mentioned in the patent, but harmfulness has never been thoroughly assessed. Boukebous et al. experienced two consecutive postoperative acute CHs, in which the origin of active bleeding obviously came from pinholes, despite careful obturation. The aim of this study was to report these two cases and provide a comprehensive assessment of the dangers of Caspar pin distractors. The intrabody vascularization was well organized, and there was a central pedicle arising from the center of the posterior wall. The pedicle penetrated deeply into the body and constituted Batson's channel posteriorly. Retrospectively, it was well-identified in both cases on preoperative imaging. Given the morphological features of the vertebral cervical bodies and Caspar pin, the pin may reach the center of the posterior wall where the pedicle arises. A comparison between vertebral body volumes and the volume of the screwable part of the pins revealed that the pin could occupy up to 7.3% of the total body if randomly inserted. However, pins are in fact inserted into a particular place that contains the pedicle. Epidural bleeding is variable and may be undetected before closure. This also depends on blood pressure variations and changes in the patient's position. Even though Caspar's pins are tiny, the likelihood of intrabody vascularization damage appears to be significant. Caspar pins should not be used systematically. Pinhole obturation must be solid and deep. Alternative options such as an interbody distractor and a microscope for the discectomy should be considered [1].

The insertion of available cervical retractor systems is relatively complex for the limited exposure required for single-level anterior cervical discectomy.

Eftekhar introduced a novel cervical retractor system and report the initial experience of its application.

A simple retractor system was designed that is fixed to the vertebral body through Caspar pins. The design allows the retractor to move with the vertebrae during distraction via the traditional Caspar cervical distractor system. The advantages and limitations of the device based on the initial experience are discussed.

The author has used the current version of the retractor on 32 single-level anterior cervical discectomies. The insertion of the retractor is easy, and its application provides safe and satisfactory anterior cervical exposure. There have not been related complications, although transient dysphagia has not been prevented.

This newly designed retractor system is simple and efficient for a single-level anterior cervical discectomy, and its insertion is relatively easy [2].

1)
Boukebous B, Maillot C, Hachache BE, Rousseau MA. Tiny but risky: the reasons why the Caspar pin distractor causes suffocating cervical hematoma - two cases and a literature review. Neurochirurgie. 2022 May 1:S0028-3770(22)00071-6. doi: 10.1016/j.neuchi.2022.04.002. Epub ahead of print. PMID: 35508266.
2)
Eftekhar B. A Simple Retractor for Anterior Cervical Diskectomy. J Neurol Surg A Cent Eur Neurosurg. 2019 Aug 13. doi: 10.1055/s-0039-1685182. [Epub ahead of print] PubMed PMID: 31408888.