A modified drill guide for the anterior cervical fusion (Cloward) procedure

Technical note

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A modified drill guide for use in the anterior cervical fusion procedure is described. This device permits inspection of the interbody hole during the drilling process, and incorporates the additional mechanical improvements of replacement fixation points and locking rings of different diameter. These modifications have been found to simplify and improve control over the drilling component of this surgical procedure.

KEY WORDS • anterior cervical fusion • drill guide • cervical fracture • intervertebral disc

Anterior cervical fusion has become accepted as a form of treatment of cervical intervertebral disc disease with nerve root compression, and of cervical fracture with instability.1,2 The conventional drill guide used in the Cloward procedure is in the form of a tube, and it is necessary to remove the drill guide in order to inspect the depth and progress of the drilling process. We have constructed a guide with pillar-type supports that permits repeated inspections of the hole without removal of the drill guide. Additional minor mechanical improvements, such as replaceable threaded fixation points and locking rings of different diameter, have also been incorporated.*

Description and Technique

The tubular walls of the conventional guide have been replaced by two pillars of rounded solid stainless steel stock, attached to a suitably shaped footplate (Fig. 1). The pointed fixation pins of the footplate are made in the form of a screw (the body is threaded, and has a slotted end) so they can easily be replaced when worn or damaged. The knurled locking rings at the upper end of the guide are of slightly different diameter, and this permits these components to be gripped easily when they are being locked or unlocked in the process of depth adjustment.

The guide is seated over the appropriate intervertebral disc, and tapped into place so that the fixation pins enter the upper and lower portions of the adjacent vertebral bodies. The undersurface of the footplate is concave in order to accommodate the convex anterior margins of the vertebrae. A depth adjustment is then made by locking the knurled locking rings in the appropriate position, and a hole is drilled to the proper depth. The process and depth of the hole can be readily inspected during the drilling stage by removal of the drill while the guide remains in place.

Comments

The routine use of this modified drill guide has simplified the drilling of the interbody hole. Formerly, it was often difficult to replace the drill guide accurately once it had been removed; this modification permits precise control of the depth of drilling while the guide remains in place. Furthermore, instruments

*Drill guide available from 285841 Ontario Limited, 81 Howland Avenue, Toronto, Ontario, Canada M5R 3B2.
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can be introduced into the hole under direct vision in order to remove bone dust and disc material, and in order to gauge the depth of the hole and thickness of the remaining bone. In our experience, it has never been necessary to remove the drill guide before the drilling procedure has been completed. As this modified guide permits a direct view of the hole, it has provided us with a greater sense of security and control during the entire drilling process.

References


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