Technical Note

Double-hook retractor for microlumbar discectomy and foraminotomy

J. K. B. C. Parthiban
Department of Neurosurgery, Kovai Medical Center and Hospital, P.B No. 3209 Avanashi Road, Coimbatore - 641014, India.

Aiming to achieve better results in microlumbar discectomy and foraminotomy, a double-hook retractor has been designed to retract lumbar paraspinal muscles away from the spinous process. A double-hook retractor obviates the limitations of single-hook systems.

**Key Words:** Microlumbar discectomy, Foraminotomy, Double-hook retractor, Interspinous ligament.

### Introduction

Since the description of Microlumbar discectomy (MLD) in 1974 by Caspar, various types of microlumbar retractors have been used. The majority of these systems have a hook on one side and a flat blade on the other. The hook is placed over the interspinous ligament and the flat blade on the paraspinal muscle. In order to achieve satisfactory exposure of the desired field the paraspinal muscles are retracted against the interspinous ligament, which is a yielding and flexible soft tissue.

A double-hook retractor is described here. Using a double hook retractor the paraspinal muscles are retracted against the bone-lateral surface of the spinous process. Such a retractor limits interspinous ligament injury and provides excellent paraspinal muscle retraction.

### Material and Methods

Mueller's microlumbar discectomy retractor is basically a single-hook system (Figure 1). The double-hook system has two hooks based on a single holder. The hooks are placed between 20 mm and 25 mm at the holder and the tips in turn are 15 mm and 20 mm apart. The tip of each hook rests on the side of the spinous process. The paired hooks are 55 and 65 mm long, which will facilitate placement at various depths.

**Figure 1:** Mueller's Microlumbar discectomy retractor

Surgical technique

In microlumbar discectomy, an incision of less than 3 cm is made between two respective lumbar spinous processes. Subperiosteal separation of paraspinal muscles from the spinous processes and laminae is performed. A suitable double-hook retractor is selected and the hooks are placed over the lateral aspect of the adjacent spinous processes. The hooks avoid the interspinous ligament. A suitable flat blade is now introduced on the sides of the paraspinal muscles. The parallel bars of the retractor system are now introduced in the slots available on the blade and are distracted over a serrated bar. This maneuver now efficiently retracts the paraspinal muscle away from the spinous processes and provides a rectangular surgical field exposing the adjacent laminae, interlaminar space and the medial edge of the facet joint. The interspinous ligament is not disturbed.

In lumbar foraminotomy for excision of extreme lateral disc prolapse, a 20-mm incision over the selected spinous process is...
made and the paraspinal muscles are separated to expose the lateral edge of pars and facets. A 55-mm long / 15-mm double-hook retractor is selected and the hooks are applied over the sides of the adjacent spinous process (Figure 2). The paraspinal muscle is now retracted against the spinous processes using the flat blade, until the lateral edge of the pars is visualized.

In both these procedures the paraspinal muscles are retracted effectively against the bone (spinous process) by the double hooks. The blades are always even and need no replacement during the procedure. All conventional microdiscectomy instruments can be used without technical difficulties.

References


Accepted on 11.10.2003.