

Minimal Invasive Percutaneous Core Decompression For Avascular Necrosis of Femoral Head

W Ngai, K Yu

Citation

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Abstract

INTRODUCTION

Core decompression has been developed more than three decades and this procedure is widely practiced worldwide for avascular necrosis of femoral head in early stages¹⁻⁴. Traditional open technique involves traumatic stripping with damage to the vastus lateralis muscle. We describe a novel minimal invasive percutaneous technique of core decompression by the use of Medtronic METRx™ system.

Medtronic METRx™ system was originally designed for microdiscectomy which provide access to spine with less trauma. This system is special designed metal tubes (dilators) with progressive increase in size. These dilators when inserted sequentially from small to large size will gradually separate the muscle, so that an opening is created for the surgical instruments to work in. With modified technique, we apply this system to be used in core decompression of femoral head.

SURGICAL TECHNIQUE

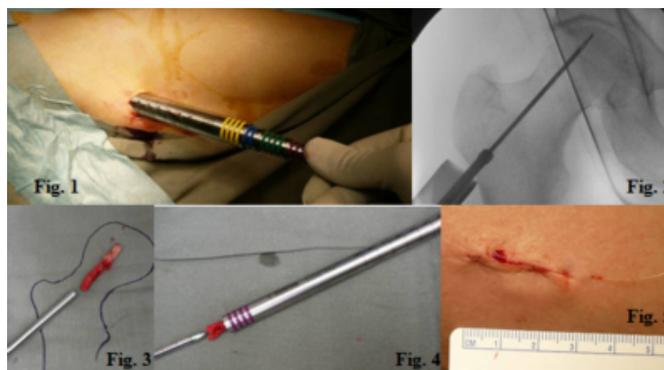
Patient is lying on traction table in supine position. Under fluoroscopic guidance, a needle is inserted through skin and muscle to determine the anticipated core direction. A 1-inch stab incision is made with dilators inserted one after the others, the vastus lateralis muscle will be separated gradually with lateral cortex of the femur being reached. A long guide pin was inserted through the dilators under fluoroscopic guidance. After reaming out the near cortex through the dilators, a column of necrotic bone from femoral head was cored out. More necrotic bone from the femoral head could be removed with the use of an angle curette. Normal cancellous bone graft retrieved from proximal part of femur was packed back to the femoral head with the dilators acting

as the portal. Stab wound was subsequently closed.

Using this technique, core decompression is done as day procedure with less post-operative pain. The cosmetic result is excellent with smaller scar.

Figure 1

Figure (1) Insertion of dilators (2) Reaming under fluoroscopic guidance (3) A column of necrotic bone core out (4) cancellous graft was packed through the dilators (5) 1-inch incision was closed with excellent cosmetic result



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