SCIENTIFIC PAPER

Primary total knee replacement using constrained condylar prosthesis in knee with severe varus deformity

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ABSTRACT

Constrained condylar knee prosthesis is commonly used in revision total knee replacement because of ligamentous imbalance. The use of constrained condylar knee prosthesis in primary total knee replacement has not been widely studied, especially in severe varus deformity of the knee. We aim to study the results of primary total knee replacement in knees with severe varus deformity. From 1996 to 1999, we performed 13 constrained condylar knee procedures in 12 patients with varus deformity of greater than 20°. The decision to use constrained condylar knee was determined intraoperatively, principally when the lateral collateral ligament laxity was >2 mm even after adequate medial soft tissue release. The average follow-up was 38.9 months. The mean varus deformity was 24.6°. The Knee Society knee score, function score and range of motion were improved from 23.1, 35, and 81 to 92.2, 60, and 104.4, respectively. There were no radiological signs of loosening at latest follow-up. The constrained type of knee prosthesis is a good alternative to ligamentous reconstruction in primary TKR with severe varus deformity when ligament imbalance persists after adequate medial soft tissue release.

Key Words: Constrained condylar prosthesis; Total knee replacement; Varus

INTRODUCTION

The constrained type of knee prosthesis has been used since the mid-1970s. It was mainly used for revision after the early failure of hinged knee prosthesis. Most of the literature supports its use in revision TKR and primary TKR with severe valgus deformity.²⁴,⁷,⁹,¹⁴ Chinese patients with severe varus deformity (>20°) tend to have their TKRs done in a relatively late stage (Fig. 1). The degree of lateral collateral ligament laxity

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