تركيب مفصل صناعي كامل للفخذ بعد عملية تثبيت المفصل

مقال
توطئة للحصول على درجة الماجستير في جراحة العظام

بواسطة

د/ عاطف صابر محمود عبد الفتاح
بكالوريوس الطب

تحت إشراف

أ.د/ أكرم حسن عبده عزام
أستاذ جراحة العظام
كلية الطب جامعة القاهرة

أ.د/ فؤاد زامل صادق
أستاذ مساعد جراحة العظام
كلية الطب جامعة القاهرة

جامعة القاهرة
كلية الطب

Conversion of Hip Arthrodesis To Total Joint Arthroplasty

An essay

Submitted for fulfillment of M.Scs.degree in Orthopaedic surgery

By

ATEF SABER MAHMOUD ABD EL-FATTAH
M.B.Bch

Under Supervision of

Prof .Dr. AKRAM HASSAN ABDO AZZAM
Professor of Orthopaedic Surgery
Cairo University

Dr. FOUAD ZAMEL SADEK
Assistant professor of Orthopaedic Surgery
Cairo University

Cairo University
Faculty of Medicine

ABSTRACT

The management of young adults with severe osteoarthritis of the hip remains a problem because of the increased failure rates of total hip arthroplasty (THA) as well as the prospect of multiple revisions in this population. Although hip arthrodesis is not perceived favorable as an alternative by most orthopaedic surgeons or patients because of the presumption of less than optimal functional outcomes, it is a viable technique, especially for younger patients with a recent history of local infection and/or trauma. Back and ipsilateral knee pain are the most common complaints leading to secondary conversion of a hip fusion to a THA. Symptoms improve markedly after conversion. Survivorship of the conversion THA is comparable to that of a primary THA when the patient is older than 50 years of age and multiple surgical procedures have been avoided.

Keywords: Arthrodesis, arthroplasty, hip

ACKNOWLEDGMENTS

First of all, thanks to Allah, the most merciful, the most gracious, for giving me the strength and power to finish this work. I would like also to express the deepest thanks and gratitude to Professor Dr. Akram Hassan Abdo Azzam, Professor of orthopedic surgery, Cairo university, who offered me a great deal of support and helped throughout this work and for his continuous guidance. I would like to express the deepest thanks and gratitude to Dr. Fouad Zamel Sadek, Assistant Professor of Orthopaedic Surgery Cairo University, to whom I'm extremely indebted, for his help, continuous support, and guidance throughout this work to make it complete and kind scientific supervision. Lastly I would like to thank my family and my wife and her family for their continuous support and help.

LIST OF CONTENTS

LIST OF FIGURES

LIST OF FIGURES

LIST OF TABLES

Introduction

Arthrodesis of the hip remained an alternative treatment for severe unilateral arthritis after traumatic injury or infection in young but otherwise healthy individuals because the long-term results of total hip arthroplasty in such patient used to be disappointing **(Joshi AB et al, 2002).**

Over time a fused hip may be associated with function disability such as pain in the lower back, contra lateral hip, and/or either knees. Furthermore primary total hip arthroplasty is associated with a higher rate of failure when the contralateral hip has a long-standing fusion **(Callaghan JJ et al, 1985).**

Various techniques are now available to achieve a successful arthrodesis of the hip, but care must be taken while performing these procedures, so that, a future conversion to an arthroplasty is not compromised **(Joshi AB et al, 2002).**

Conversion to a total hip arthroplasty is done for loss of function over time, malposion of the fused hip, and progressive pain in the lower back, knee and/or contralateral hip **(Joshi AB et al, 2002).**

The relief of pain in the lower back and knee, improved mobility of the hip and the correction of limb length discrepancy are the reasons why most patient are satisfied with the result of these procedure **(Joshi AB et al, 2002).**

The surgery is technically difficult because of loss of the surgical landmarks and the difficulty in restoring the joint mechanics. Under development of the abductor muscles after fusion of the hip prior to puberty has been a matter of concern when conversion to total hip arthroplasty is contemplated **(Besser, MIB 1982).**

CHAPTER ONE

SURGICAL ANATOMY OF THE HIP AND ACETABULUM

ANATOMY OF THE HIP

The hip joint is a ball-and-socket joint composed of the acetabulum and femoral head. The stable hip joint is constructed to allow for a large range of motion necessary for normal daily activities such as walking, sitting, and squatting **(Margerta and Frankel, 1980).**

The femoral head:

The femoral head is the convex component of the ball-and-socket configuration of the hip joint and forms two-thirds of a sphere. The cartilage covering the head is thickest on the medial-central surface and thinnest towards the periphery. Variation in thickness of the cartilage result in a different strength and stiffness in different regions of the femoral head Fig. (1-1) **(Rydell, 1965).**

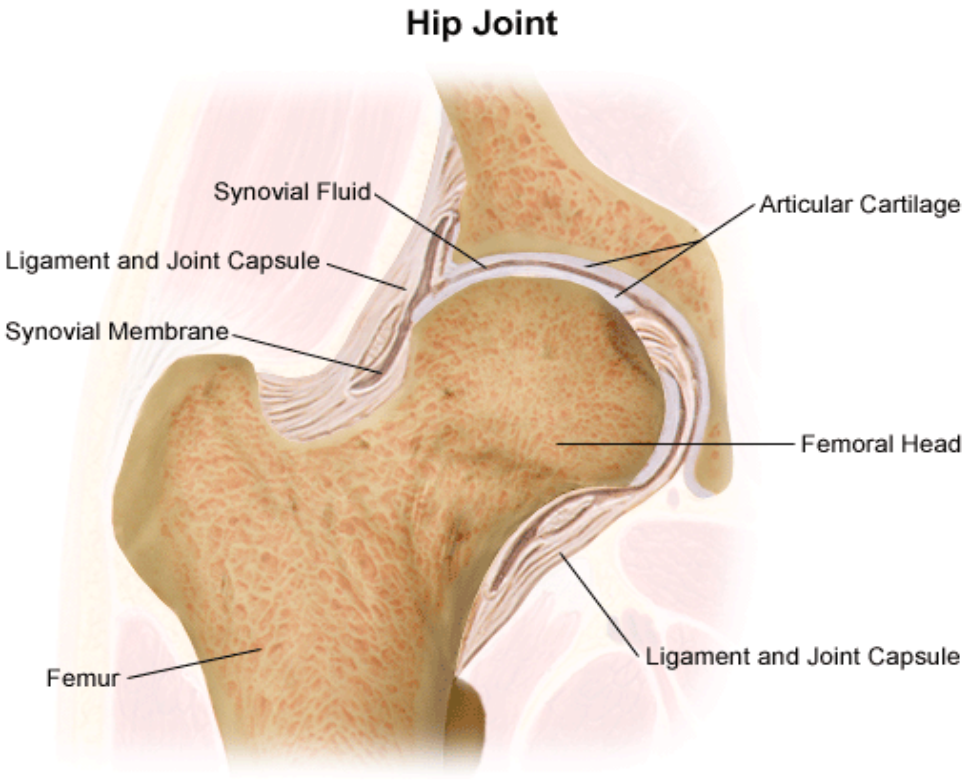

Fig. (1-1) shows anatomy of hip joint (Rydell, 1965).

The femoral neck:

The femoral neck has two important angular-relationships with the femoral shaft; the angle of inclination of the neck to the shaft in the frontal plane, the neck-shaft angle, and the angle of inclination in the transverse plane, the angle of anteversion. Freedom of motion of the hip joint is facilitated by the neck-shaft angle, which places the femoral shaft away from the pelvis laterally. In most adults this angle is about 120–140 degrees **(Margerta and Frankel, 1980).**

The angle of anteversion is formed as a projection of the long axis of the femoral head and the transverse axis of the femoral condyle. In adult populations this angle averages about 12 degrees, but may vary widely. Anteversion of more than 12 degrees will cause a portion of the femoral head to be uncovered and will create a tendency toward internal rotation of the leg during gait to keep the femoral head in the acetabular cavity. An angle less than 12 degrees will produce a tendency toward external rotation of the leg during gait **(Margerta and Frankel, 1980).**

The Calcar femoral is a dense plate of bone that originates from the postero-medial portion of the femoral shaft, where it blends into the neck of the femur and extend superiorly toward the greater trochanter, fusing with the posterior cortex of the femoral neck, it is more of a posterior than a medial structure **(Swiontkowski, 1994).**

The interior of the femoral neck is composed of cancellous bone, which is divided into the medial and lateral trabecular systems. The joint reaction force on the head of femur parallels the trabeculae of the medial trabecular system,