



EDELWEISS PUBLICATIONS
OPEN ACCESS

Edelweiss Journal of Biomedical Research and Review

Commentary

ISSN 2690-2613

Fibula Ostectomy as Palliative Treatment of Knee Osteoarthritis

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Citation: Gonzalez JCC, Plain LD, Pazos CP, Pineiro SM, Plain APA, et al. Fibula ostectomy as palliative treatment of knee osteoarthritis (2020) Edel J Biomed Res Rev 2: 36-37.

Received: Aug 18, 2020

Accepted: Sep 07, 2020

Published: Sep 14, 2020

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Abstract

Osteoarthritis is a degenerative joint condition characterized by progressive loss of joint cartilage. The knee joint is one of the most affected by this disease. Although there are different procedures for the surgical treatment of this pathology, fibular ostectomy in recent years is giving very good results. Although this surgical technique does not eliminate osteoarthritis of the knee, it does improve the symptoms and functional disability of the joint. Fibula Ostectomy is a palliative treatment of choice in knee osteoarthritis.

Keywords: Osteoarthritis, Knee pain, Ostectomy of fibula.

Abbreviation: VAD-Varus Angular Deformity, KO-Knee Osteoarthritis, UA-Unicompartmental Arthroplasties, PFO-Partial Fibular Ostectomy, TK-Total Knee.

Introduction

Osteoarthritis is a degenerative joint condition characterized by progressive loss of articular cartilage, marginal bone hypertrophy (osteophytes) and changes in the synovial membrane, where the inflammatory component plays a fundamental role. This condition is very frequent at present, statistical data reveals that 12% of the population of the United States is affected by this disease and represents around 27 million people with an annual expenditure of 90 billion dollars. It is characterized by mechanical pain that is often associated with stiffness and progressively leads to loss or decrease in joint function. It is a systemic, multifactorial, prevalent, progressive and incurable disease [1-3].

The knee joint is one of the most affected by this disease and is often accompanied by angular deformities, especially varus. Under normal conditions, 60 to 80% of the weight load is distributed in the medial compartment of the knee. Hence, this compartment is considered the starting site of the disease and its condition is also a factor of progression [1,2,4].

Most of the carriers of this pathology present to the consultation with intense and intermittent or continuous pain, mobility disorders, deformity and joint instability. All of the above causes both physical and psychological affection of the patient by affecting their quality of life. For the treatment of Knee Osteoarthritis (KO) with Varus Angular Deformity (VAD), there are a number of treatment variants, especially surgical ones where they are found: osteotomies, Unicompartmental Arthroplasties (UA) and Total Knee (TK).

However, each of these procedures have specific indications, which limit their indication, for example, osteotomies, among other elements, require good bone quality and are performed in patients generally under 60 years of age. UA and TK are not available at every moment due to its complexity and cost. Hence the need for an alternative method, for the treatment of patients with VAD, such as Partial Fibular Ostectomy (PFO) [2,4].

PFO is a new surgical technique initiated by Professors Yang Zong-You, Ying Ze Zhang and their group of collaborators, who perform a proximal fibula ostectomy of approximately 2 centimeters, carried out between 6 and 10 centimeters below the head of the fibula, with the purpose of decompressing the internal compartment into the genu painful varus and in this way alleviating the patient's pain, improving the function and gait of the patient with minimal resources and a faster recovery thereof. Surgical indications for performing PFO are the same as for osteotomy except for age and bone characteristics, since osteotomy requires good bone quality on the part of the patient, hence PFO is a useful variant in patients with KO and VAD of 60 years of age or more, which due to the age element is not feasible to perform the osteotomy. PFO is a technically undemanding procedure, it does not have complications related to osteotomy and it allows the support of body weight immediately [4-6].

Yang ZY, et al, as a result of their research in 110 patients with more than two years of follow-up, found that OPP decreases pain (according to the SAV: visual analog scale) in patients with KO and VAD,

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improves radiographic appearance (tibiofemoral angle and lateral joint space) and joint function based on the American Knee Society Score, which delays or cancels the need for a TK. Hence, this author considered this method as safe, simple and effective [5].

In Cuba, the medical team of Dr. Enrique Pancorbo, who is also a second degree specialist in Orthopedics and head of the orthopedics and traumatology specialty of the Mario Muñoz military hospital in the city of Matanzas, began to apply this method since April 2016, until 2018 108 patients, 43 men and 65 women passed through the rooms; between the ages of 50 to 84, with an average life span of one hundred people of 65.4 years. The improvement in clinical symptoms, among which pain stands out, was almost immediate in these patients. In the opinion of the specialist, the use of this simple, practical and economic surgical method, without the expense of large material resources, is feasible to improve the quality of life of patients and their families. As KO is a chronic degenerative disease, it is not eliminated with the aforementioned surgical procedure, but it has been shown that it is possible to distribute the weight load between the two compartments of the knee, thereby eliminating pain. PFO reduces costs by early incorporating the affected person into their activities, improves the quality of life for him and his family, can be applied to both sexes, reduces knee deformity and has a positive impact on the social and economic aspects [7].

Although this surgical technique does not eliminate osteoarthritis of the knee, it does improve the symptoms and the functional incapacity of the joint almost from the moment of the surgical intervention. Since 2018, a project on the application of the fibula ostectomy technique described by Dr. Yang has been running at the "Mártires del 9 de Abril" General Teaching Hospital in Sagua la Grande, Villa Clara province, Cuba. ZY, et al, in patients older than 60 years with a diagnosis of KO and VAD, which hopes to demonstrate the effectiveness of this technique for improving the clinical symptoms of these patients [5].

After the age of 60, the surgical possibilities of patients with this diagnosis decrease, generally this is an age in which several concomitant chronic diseases tend to appear, which limit the therapeutic options to be used. In these cases, fibular ostectomy continues to be a good option to consider. Fibula ostectomy is a palliative treatment of choice in knee osteoarthritis.

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