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Open Access Journal of Cardiology
ISSN: 2578-4633

Major Amputations from Vascular Causes Continued to be a Challenge for the Vascular Surgeon in the 19th Century

Cabrera Zamora JC*

National Institute of Angiology and Vascular Surgery, Cuba

***Corresponding author:** Jose Luis Cabrera Zamora, National Institute of Angiology and Vascular Surgery, Havana, Cuba, Email: czamora@infomed.sld.cu

Short Communication

Volume 7 Issue 1

Received Date: April 04, 2023

Published Date: May 10, 2023

DOI: 10.23880/oajc-16000178

Keywords: Coronary and Cerebrovascular Disease; Vascular Surgery; Amputations; Arteriology

Abbreviation: DM: Diabetes Mellitus.

Brief Communication

Peripheral arterial disease together with coronary and cerebrovascular disease are the result of atherosclerotic disease, which is why they constitute a major health problem worldwide, despite the important advances that vascular surgery has experienced in recent years. Major amputations due to ischemic causes continue to be part of the surgical practice of vascular surgeons; its incidence has remained stable in recent decades and ranges between 17 and 43 amputations/100.000 inhabitants/year [1].

In the western hemisphere, amputations of vascular origin represent 80% of all amputations; just as in our country the lower limbs have the highest frequency in a 9:1 ratio [2].

It is estimated that 2,800 amputations are performed daily worldwide. In the United States, about 86,000 amputations are performed each year. In 2005, the prevalence of patients with loss of lower limbs was 1.6 million people; it is estimated that by 2050 this figure will rise to 3.6 million people. Most cases will be due to vascular etiology such as peripheral arterial disease and diabetes mellitus (DM), commonly associated with vascular amputations [3].

In Mexico, the Mexican Academy of Surgery indicated in 2012 the performance of 75 amputations/day, which means 27,375 amputations/year; The Mexican Institute of Social Security indicated that in 2013, 75,000 amputations were carried out in the Mexican Republic; It is estimated that 15 to 28% of patients with amputations above the knee will require contra lateral amputation within a period of no more than 3 years, of the elderly who undergo amputation above the knee only 50% survive the first 3 years. Until 1965 the ratio of suprapatellar/infrapatellar (above knee/below knee) amputations was 70:30; 25 years later the utility of keeping the knee has shown a change of 30:70 (above knee/below knee) [4].

Mc Cook Martinez, et al. carried out an epidemiological investigation in Cuba with 218 patients from 26 municipalities of the Havana province who had undergone a major, supra or infracondylar amputation of the lower limbs during the year 1977, aimed at knowing the frequency and distribution of such operations, as well as their morbidity and mortality rates and the factors correlated with them, in addition to some aspects of their socioeconomic repercussion and the possibilities of rehabilitation. The incidence rate found was 12-23 per 100,000 inhabitants. Diabetic Angiopathy and atherosclerosis obliterans constituted the underlying disease in 90.4% of the patients, with age and the topography of the arterial occlusions being correlated with the supra or infracondylar level of the amputations. The morbidity rate was 31.7% and the mortality rate was 24.3%. The factors that influenced them were identified. Thromboembolic complications constituted 59.5% of the causes of death among amputees, only 11.9% of the patients were active workers and around 50% used prosthesis, were trained for it or had requested it within of the year following the operation [5].

Cabrera Zamora, et al. in their study of characteristics of major amputations in patients with acute thrombotic arterial ischemia of the lower limbs, 150 patients who had

been admitted to the Arteriology and Diabetic Angiopathy services of the National Institute of Angiology and Vascular Surgery for a period of After five years, 71 of them underwent a major amputation where a predominance of male patients was found (n= 44; 61.97%); and regardless of sex, a higher frequency of patients over 60 years of age had a superiority of non-diabetic patients (67.6%). When analyzing the behavior of the highest level of amputation, it was found that it was in them where the highest practice of supracondileo amputations occurred (69.6%) [6].

Nonell Martínez L, et al. Demonstrated in their research, Patients with lower limb amputations due to vascular causes in the Cerro municipality. Results: There was a predominance of vascular amputees (56.1%), females (54.7%), the age group of 60 years and over (84.4%), and AHT and smoking (both with 60.9%). Supracondilea amputation was the most performed (64.1%). Ischemic diabetic foot and obliterative atherosclerosis were the vascular causes that led to the highest percentages of amputation. A highly significant association was found between the male sex and atherosclerosis obliterans (X2= 5.4; p = 0.113, OR = 2.68 and RR = 1.81), which pointed to this as a risk factor for amputation. Conclusions: Amputations appeared more frequently in women older than 60 years, of the supracondileo type and due to diabetic foot as a vascular cause. Atherosclerosis obliterans in men was a risk factor for amputation [7].

The general trend towards an increase in atherosclerotic lesions in the peripheral arteries, both in the diabetic and non-diabetic population, which accompanies economic and social development and the consequent increase in life expectancy, is an important fact for our country whose the population structure is getting closer and closer to that of developed countries, since such arterial lesions are the main causes of amputations, whose high frequency and high morbidity and mortality rates are universally recognized. Despite this, there are very few population studies in this field [8-10].

An amputee patient implies a problem not only for himself and his environment, but also for the health team and the health authorities, since the decrease in physical capacity and the psychological trauma suffered by the person who loses a limb or part of this, the loss of man-work-hours is added with the consequent decrease in income, the "out-of-pocket expense" of the family group and the high costs for the health system, as well as for social security.

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