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Lymphedema: Anatomoclinical Aspects and Surgical Management at the Ignace Deen National Hospital of Conakry (Guinea)

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Abstract: *Introduction:* We aimed to report the anatomoclinical aspects and the management of lymphedema in the general surgery department at Ignace Deen National Hospital of Conakry (Guinea). *Patients and methods:* this was a retrospective study including consecutive patients with lymphoedema who were admitted and had surgery in our department during a period of 10 years (from January 2010 to December 2019). *Results*: during the ten years we collected 25 cases of lymphedema: 11 male and 14 females. The mean age of the patients was 45 years-old. The disease onset varies from 6 months to 18 years with a mean of 7.5 years. The lesions were predominantly in the limbs (76%) and in the genitalia (24%). The microfilaria test was negative. All patients received an anti-filarial drug (diethylcarbamazine) as a precautionary measure. The procedure consisted of resection of the lymphangiomatous tissue and a reconstruction plasty. After a 2-year follow-up we did not observe any case of recurrence. *Conclusion*: Lymphedema is a rare pathology in our environnement that occurs predominantly in the limbs and genitalia. This disease has a significant impact on the quality of life of patients, the functional, aesthetic and psychological repercussions. A well performed excisional surgery with reconstruction allow a satisfactory result.

Keywords: Lymphedema, Anatomoclinical Aspects, Management, Conakry, Guinea

1. Introduction

Lymphedema is a disease due to mechanical insufficiency of the lymphatic system, characterized by the accumulation of protein-rich fluid in the interstitial space [1, 2]. Its prevalence in the population is estimated at 1/20000 before 20 years of age with a clear predominance in women [3]. It can affect all organs with a predilection for the limbs [2]. Outside of filarial endemic areas, lymphedema is most often secondary to cancer [3, 4].

Surgical treatment of lymphedema has progressed over the last decades, due to the advent of microsurgery, which has made possible to reduce the volume of lymphedema, but also to reconstruct the defective lymphatic system [5].

The aim of this study was to report the anatomoclinical aspects and the management of lymphedema in the general surgery department at Ignace Deen National Hospital of Conakry (Guinea).

2. Patients and Methods

This was a retrospective descriptive study of 10 years

(January 2010 to December 2019), carried out in the general surgery department at Ignace Deen National Hospital of Conakry, including complete files of consecutive patients who were admitted and had surgery for lymphedema.

The patients had a complete clinical examination and investigations that included ultrasound, doopler, microfilaria test. The procedure consisted of lymphagiomatous tissue removal and reconstruction plasty.

An anti-filarial treatment (diethylcarbamazine) was given to our patients as a precautionary measure. Histological study of the surgical specimen was performed.

3. Results

During the ten years of study, we collected 25 cases of lymphedema including 14 females (56%) and 11 males (44%). The patients' mean age was 45 years-old, with extremes of 28 and 68 years-old. The age groups of 39 to 48 years (32.14%) and 48 to 58 years (32%) were the most involved. All patients lived in a filarial endemic area.

The disease onset varied from 6 months to 18 years, with a mean duration of 7.5 years. The lesions were predominant in the limbs in 19 cases (76%), of which seventeen were in the lower limbs, two in the upper limbs, and six in the genitals (24%) (Figure 1).

Figure 1. *Images of a recurrent inguinolabial lymphedema in a 28-year-old woman.*

In the lower limbs, the involvement was unilateral in 12 cases (figure 3) and bilateral in 5 cases. The diameter varied between 60 and 110 cm. We noted a complication of lymphoedema of the lower limb in the form of maceration in one case.

Ultrasound examination revealed in two patients a bilateral vaginal hydrocele without associated lesions. The echo-Doppler of the limbs and pelvis did not reveal any abnormality. The blood examination did not reveal any microfilaria, the antigenic test of bipedal lymphography and nuclear magnetic resonance were not performed.

The surgical procedure consisted of a lymphoid tissue resection and a reconstruction plasty (Figures 2, 4).

Blood transfusion was necessary in 16 patients. An anti-filarial drug (diethylcarbamazine) was given to our patients as a precautionary measure.

The anatomopathological examination of the specimens showed acute and chronic inflammatory remodeling without evidence of malignancy.

Postoperative morbidity was dominated by surgical site infection (28%) and hematoma (16%).

Six patients healed before the 25th postoperative day and the others before the 51st day due to postoperative morbidity. We did not record any deaths.

After 2 years of follow-up, we did not observe any case of recurrence.

Figure 2. *Post operative image of a recurrent inguinolabial lymphedema.*

Figure 3. *Lymphedema of the lower limb in a 45 year-old patient before surgery.*

Figure 4. *Images of a lymphedema of the lower limb after surgery.*

4. Discussion

Lymphedema is a rare condition [3]. In our practice as elsewhere in Africa, the prevalence rates are below the reality because the disease is considered as a wizardry which often leads to a consultation in traditional medicine [4].

It is a pathology of young adults, especially women, with peaks between the ages of 30 and 60 [3, 4, 6]. Its onset is progressive over months or even years, which leads to late consultation.

It's a multifactorial disease resulting from surgery, filarial infections, tumors and radiotherapy. In our study we did not noticed any filarial case despite the fact that we are in a filarial endemic area. The only case of lymphoedema of the lower limb reported by a patient did not allow us to link it to a congenital origin. The detection of microfilaria in blood depends on the time of sampling, taking into account the periodicity of the species [7].

Lymphedema, which is related to an initial accumulation of lymph in the subcutaneous tissue followed by the secondary development of increased adipose tissue and skin fibrosis, is classified into primary and secondary forms [8]. Secondary forms are dominated by lymphatic filariasis worldwide [3].

It starts in the foot, it can reach the upper limbs, scrotum, vulva and breast [2, 7]. The early stages may present with physical signs and symptoms of painless edema, discomfort and heaviness of the limb, especially after continuous use [1].

Stemmer's sign considered pathognomonic for lymphedema, consists of a thickening of the skin fold by pinching the skin on the dorsal aspect of the second toe, which becomes difficult or impossible to wrinkle [9].

The evolution can be marked by infectious complications (erysipelas), which can aggravate it secondarily [8, 9].

Like many chronic diseases, it has a significant impact on the quality of life of patients, the functional, aesthetic and psychological repercussions [5, 6].

The treatment is intended to improve the health status of the patient and restore the integrity of his quality of life [10].

The treatment was only surgical in our study, justified by the late consultation [11, 12].

Elsewhere, manual lymphatic drainage, compression stockings and microsurgery could not be performed [2, 13, 14].

In our series we did not used bandaging and physiotherapy as reported elsewhere [15].

After two years of follow-up, no recurrence was noted.

The combination of ablative surgery with restorative techniques provides functional results and improved quality of life [1].

5. Conclusion

Lymphedema is a rare pathology, most often secondary and involves all regions of the body with a predilection for the limbs. Its etiological diagnosis poses a real problem in our context however, its occurrence is probably associated with filarial infections. This disease has a significant impact on the quality of life of patients, the functional, aesthetic and psychological repercussions. Several studies reported that a well performed excisional surgery with plastic surgery allows to obtain satisfactory results.

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