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Epidemiological, Clinical, Histological and Therapeutic Aspects of Benign Skin Tumors: Experience of the Plastic and Aesthetic Surgery Department of the University Hospital of Tangier

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Abstract **Original Research Article**

Introduction/Objectives: Benign skin tumors represent a significant category of pathologies. The objective of this study was to investigate the epidemiological, clinical, histological, and therapeutic aspects of this pathological entity in the Tangier region. Benign skin tumors develop from the proliferation of one or more skin components and constitute the majority of skin tumors. ***Materials and Methods:*** This was a retrospective descriptive study conducted over a 55-month period, from April 2021 to November 2025, involving 344 patients treated for benign skin tumors in the Plastic and Aesthetic Surgery Department of the Mohamed VI University Hospital in Tangier. Patients with keloids and those with incomplete medical records were excluded. Data analysis was performed using Microsoft Office Excel. ***Results:*** The mean age of the patients was 44 years, with a range from 2 to 88 years. There was a female predominance [65%], with a male-to-female ratio of 0.53. Clinically, the lesions were predominantly nodular [88%]. The most frequent location was the head and neck region [68%]. The mean size of the lesions was 2.9 cm [ranging from 0.5 cm to 10 cm]. Solitary lesions were the most common [76%]. The most frequent tumors [based on clinicopathological diagnoses] were cutaneous cysts [51%], with 104 cases of trichilemmal cysts [30% of the total series] and 70 cases of epidermoid cysts [20% of the total series]. Lipomas accounted for 24% of cases. Treatment consisted exclusively of surgical excision in almost all patients. ***Conclusion:*** Clinical examination is crucial for the diagnosis and differentiation of malignant tumors. Histological examination remains the cornerstone for confirming the diagnosis in uncertain cases. The management of benign skin tumors in this series relied exclusively on surgical excision, with satisfactory results for all patients and no recurrence or complications noted.

Keywords: Benign skin tumors; skin cysts; lipoma; nevus; surgery; direct suture.

I. INTRODUCTION

Benign skin tumors constitute a vast and diverse category of pathologies. They arise from the proliferation of one or more components of the skin, representing the majority of tumors observed on this organ. Morphologically, they present as papules, nodules, or cystic or keratotic lesions, characterized by slow growth.

Diagnosis is often based on the patient's history and a thorough clinical examination. However, any lesion whose diagnosis remains uncertain requires a biopsy for histopathological examination to rule out malignancy. These tumors are classified according to their histological origin: epidermal, adnexal, and conjunctival, with cutaneous cysts and nevi forming distinct entities.

The objectives of this study were to establish an epidemiological, clinical, histological, and therapeutic profile of patients treated for benign skin tumors within the plastic and aesthetic surgery department of Mohammed VI University Hospital in Tangier. This work is particularly important as it seeks to fill a gap in knowledge by serving as a crucial reference for future research in this geographical area.

II. PATIENTS AND METHODS

Study Type and Population:

We conducted a retrospective descriptive study in the plastic and aesthetic surgery department of the Mohamed VI University Hospital in Tangier. The study included 344 patients treated for benign skin tumors over a 16-month period, spanning 55 months, from April 2021 to November 2025.

Inclusion and Exclusion Criteria:

All patients presenting with a benign skin tumor were included. Cases presenting with a keloid were specifically excluded.

Data Collection and Analysis:

Data were collected using a data collection form that included patient identity, medical history, clinical presentation, management, histology, treatment, and outcome. Statistical analysis was performed using Microsoft Office Excel. Qualitative variables were expressed as percentages [%], and quantitative variables as mean values with margins. Patient anonymity was strictly maintained.

III. RESULTS

A. Epidemiological Data:

Of the 344 cases included, 224 [65%] were female and 120 [35%] were male, resulting in a male/female sex ratio of 0.53, indicating a female predominance.

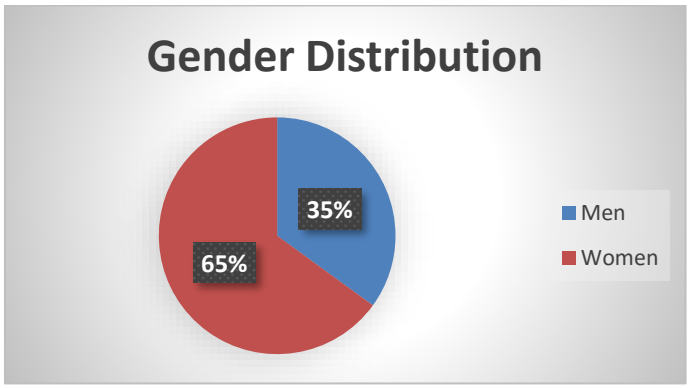

Figure 1: Gender Distribution

The average age at diagnosis was 44 years, with extremes ranging from 2 to 88 years. The peak age was between 40 and 59 years [40.11% of cases], followed by the 20-to-39-year group, together representing approximately 72% of cases.

Table 1: Age distribution

Age	Number	Percentage [%]
0–19	22	6.39
20–39	110	31.97
40–59	138	40.11
60–79	72	20.93
80–100	2	0.58
Total	344	100.00

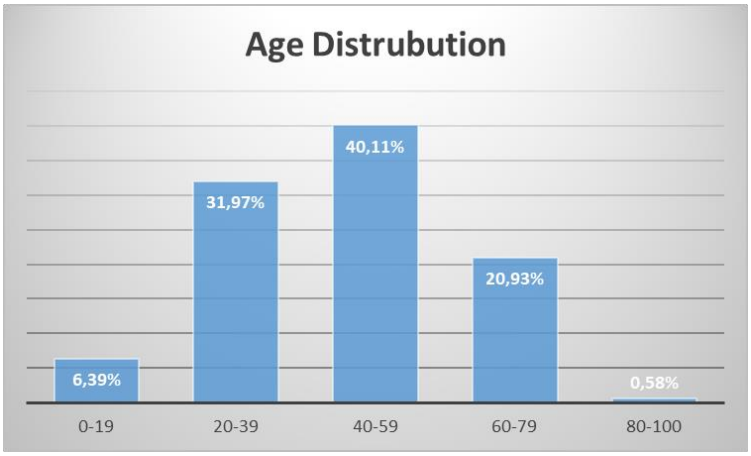

Figure 2: Age distribution

B. Clinical Data:

The method of installation was uniformly progressive for all patients, extending over a period of more than 3 months [100% of cases].

The most frequent elementary lesion was nodular [88%], followed by papular [11%]. The most commonly reported consistency was soft [47%], followed by firm [35%] and cystic [17%]. The predominant location was the head and neck region [68% of cases]. Solitary lesions were present in 76% of cases. The majority of patients [83%] had no associated symptoms.

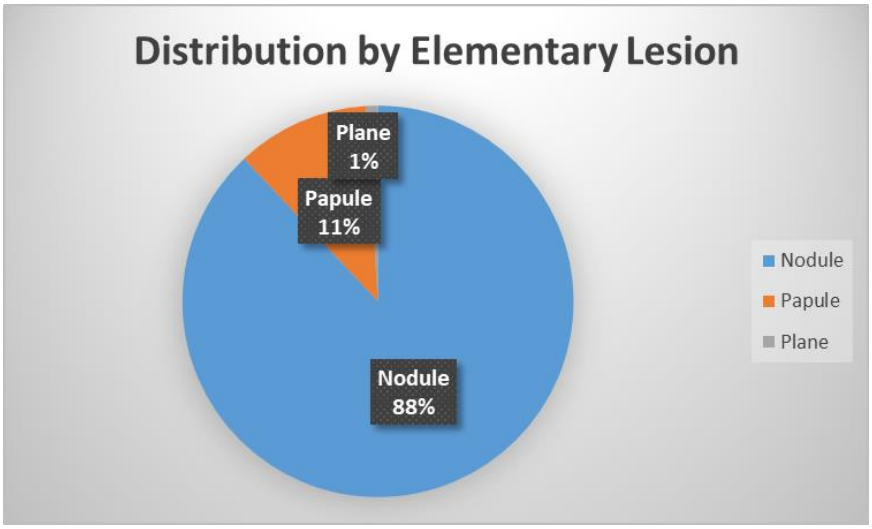

Figure 3: Distribution of cases according to the elementary lesion

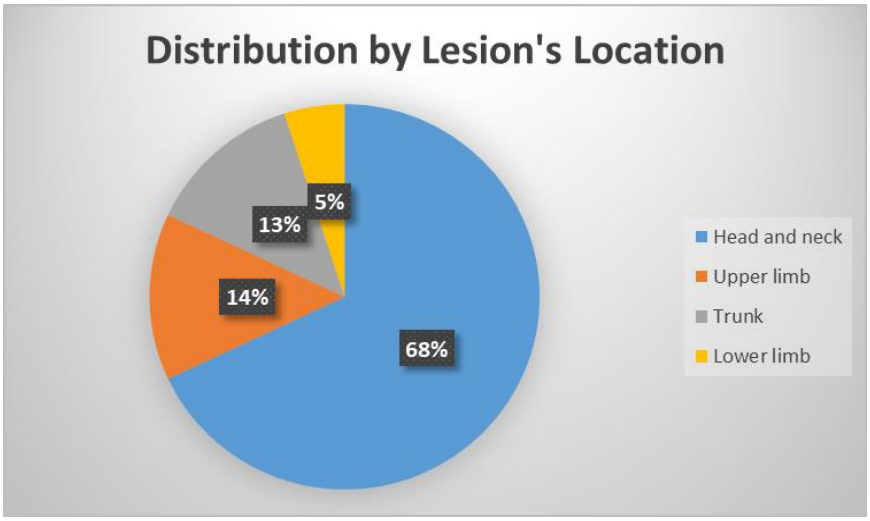

Figure 4: Distribution of cases according to location

C. Histological Diagnosis and Classification:

Anatomopathological examination was performed on all patients.

The distribution of clinico-histological diagnoses showed:

1. **Skin cysts:** 51% of cases.
   - Trichilemmal cyst: 30% of the series.
   - Epidermoid cyst: 20% of the series.

2. **Conjunctival tumors:** 34% of cases.
   - Lipoma: 24% of the series.
   - Botriomycoma: 4.65% of the series.
   - Molluscum pendulum: 4% of the series.
   - Neurofibroma: 2 patients.
   - Elastofibroma: 1 patient.

3. **Nevus:** 8.7% of cases.
4. **Epidermal tumors:** 3% of cases.
5. **Adnexal tumors:** 3% of cases.

The trichilemmal cyst was the most frequent tumor in the entire series [30% of cases], followed by lipoma [24% of cases] and epidermoid cyst [20% of cases].

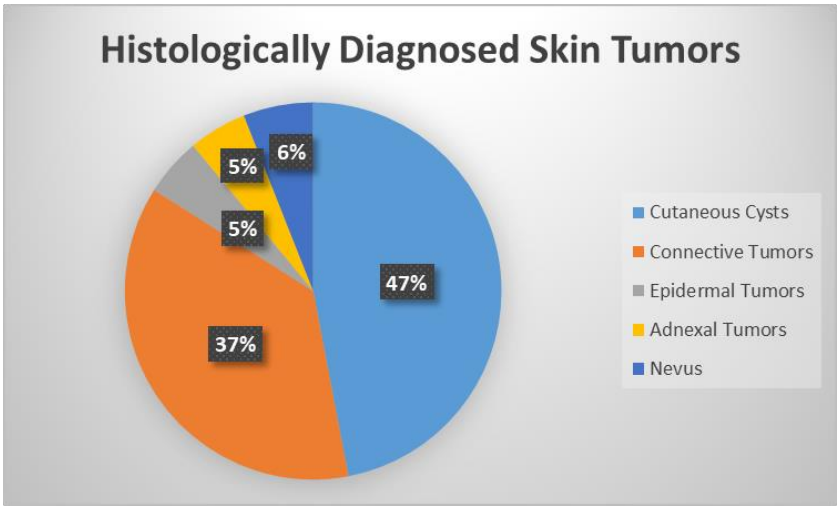

Figure 5: Distribution of benign skin tumors diagnosed histologically

D. Support and Evolution:

Treatment was exclusively surgical under local anesthesia for all patients [100% of cases]. Surgical excision was performed in the majority of cases, with two cases requiring additional excision for a neurofibroma. No superinfection or tumor recurrence was observed at the surgical site, and the satisfaction rate was good for all patients.

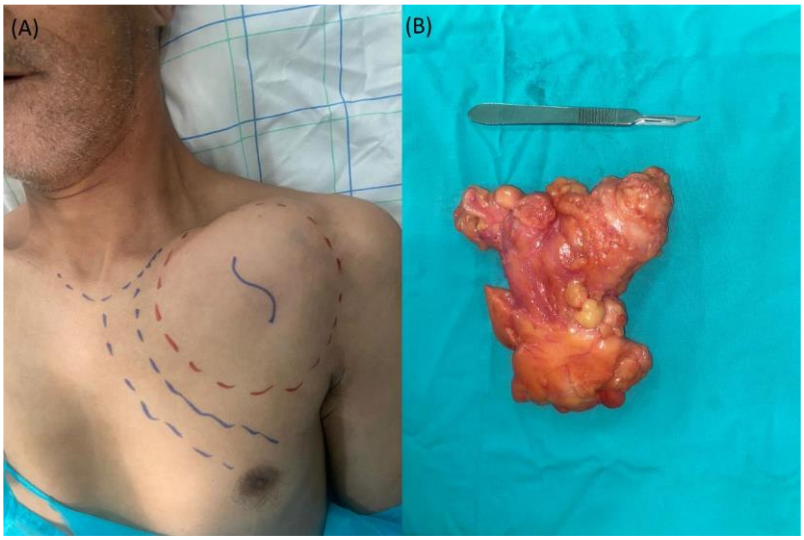

Figure 6: A lipoma. [A] Large, soft, nodular lesion located on the trunk; [B] Macroscopic appearance of a lipoma excised specimen

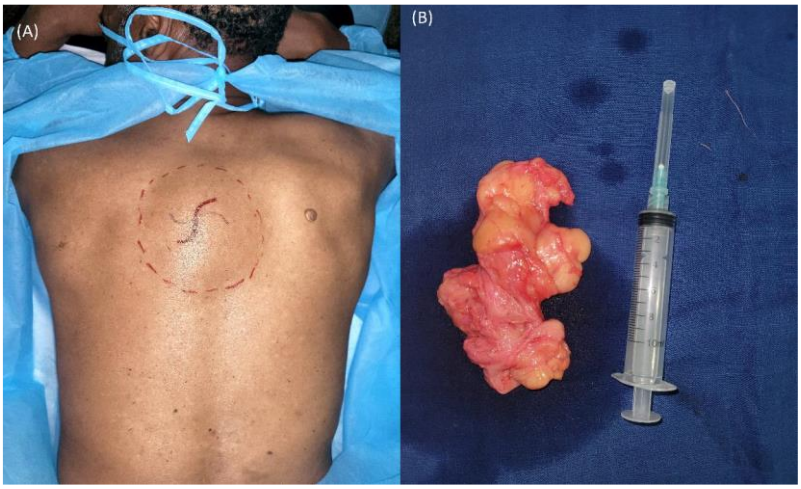

Figure 7: Lipoma. [A] Soft nodular lesion on the back; [B] Macroscopic appearance of the excised specimen

Figure 8: **Clinical appearance of a multiple lipoma located on the thigh; soft nodular lesions**

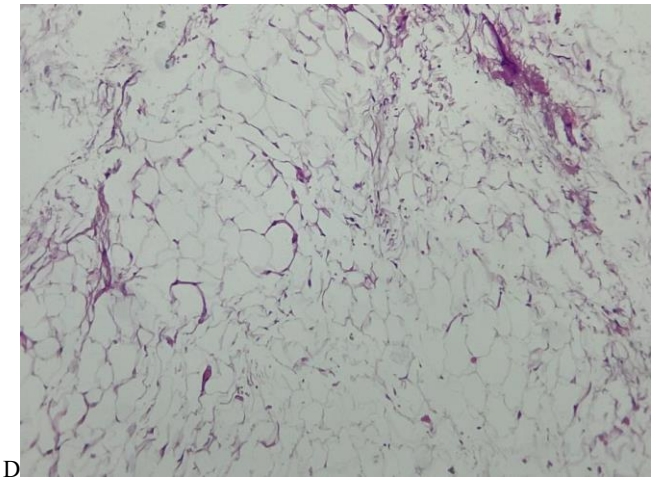

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Figure 9: Histological appearance of a lipoma showing mesenchymal proliferation composed of adipose lobules. Collection of the Tangier Ibn Specialized Center for Pathological Anatomy CHU Tangier Battouta.

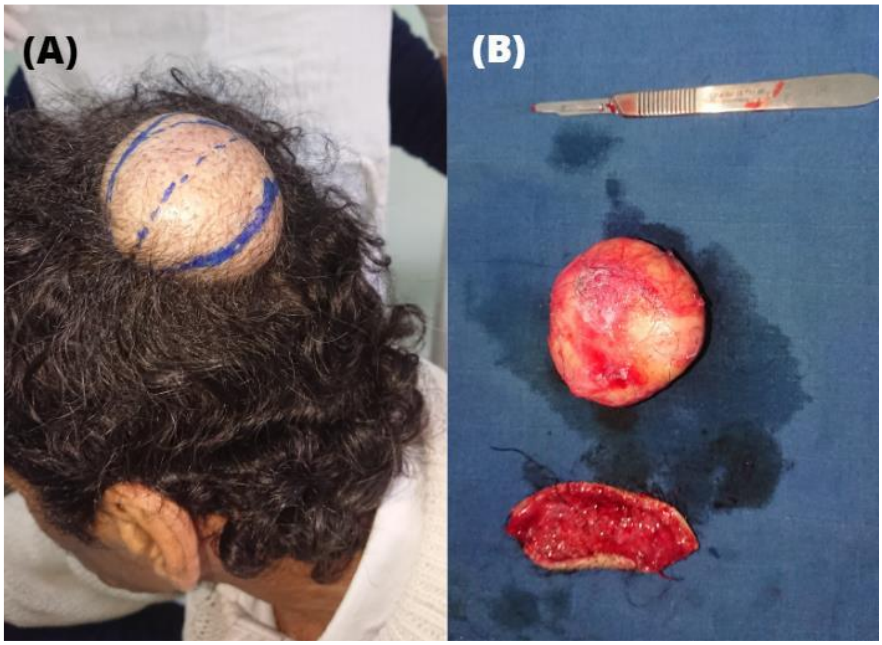

Figure 10: Trichilemmal cyst. [A] Large, firm nodule of the scalp; [B] Macroscopic appearance of the excised specimen.

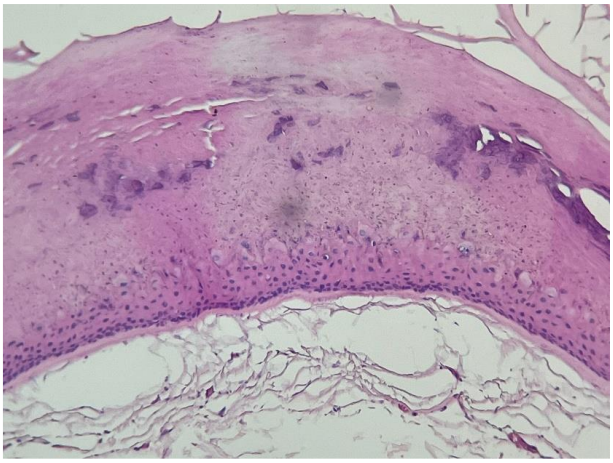

Figure 11: Histological appearance of a trichilemmal cyst showing a cystic cavity filled with trichilemmal-type keratin. Collection of the specialized center of pathological anatomy, CHU Tangier Ibn Battouta

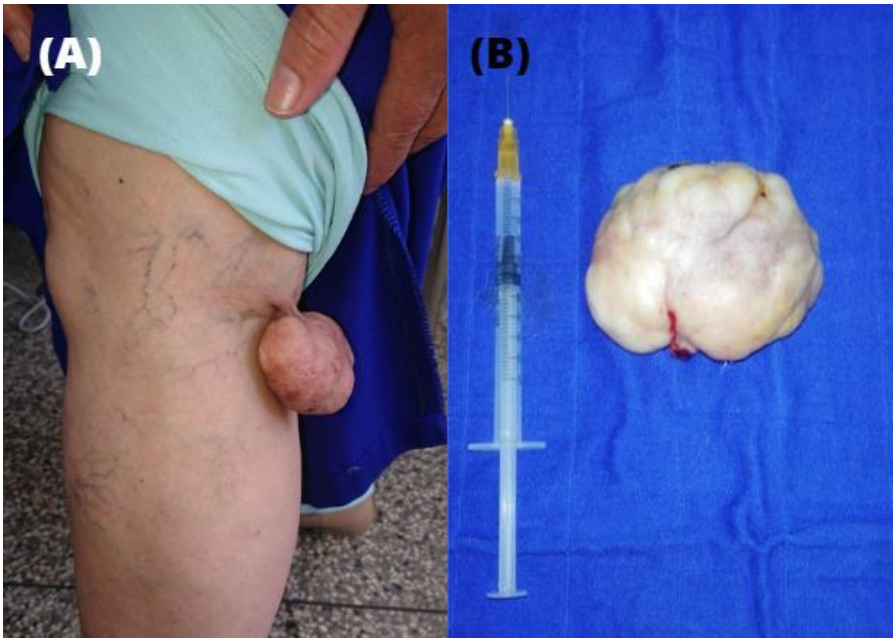

Figure 12: Molluscum pendulum; [A] soft, pedunculated nodular lesion. [B] appearance macroscopic view of the excised specimen

Figure 13: [A] Medium-sized congenital nevus located on the face; [B] Surgical excision of the lesion [1st stage]; [C] Post-operative appearance of the lesion.

IV. DISCUSSION

A. Epidemiological Analysis

The study of benign skin tumors in our series at the University Hospital of Tangier revealed epidemiological characteristics that largely agree with trends observed in other regions, while presenting some particularities.

1. Age and Sex

We noted a female predominance [65%] with a male-to-female ratio of 0.53. This female predominance is a commonly observed finding in most studies on benign skin tumors. For example, a study conducted in Marrakech found a male-to-female ratio of 0.6, and studies in Indonesia reported ratios of 0.89 and 0.42 [1-3]. Conversely, a study in Turkey observed a male predominance with a male-to-female ratio of 1.28 [4].

The most frequently cited reason for this female predominance is that women are generally more inclined to seek medical help early for concerns related to changes in their skin, including for cosmetic reasons, whereas men may wait until lesions become symptomatic or worsen.

The average age at diagnosis in our series was 44 years, with a range from 2 to 88 years. This result is close to the average age found in Marrakech [41.63 years] [1] and Turkey [39.7 years] [4]. The peak age of patients treated in Tangier was between 40 and 59 years, encompassing approximately 72% of cases between 20 and 59 years. This concentration in the working-age group is comparable to the Turkish study [4], where 79.85% of cases involved patients aged 15 to 59 years.

B. Clinical Analysis

1. Installation Method and Basic Injuries

The onset of lesions in our series was uniformly progressive for all patients [100%], developing over a period exceeding 3 months. This observation closely matches the results of Karimi S [1], where 94% of cases showed a chronic course.

Regarding the morphological aspect, the nodular elementary lesion was largely predominant, representing 88% of cases, followed by the papular type [11%]. Although the study by Karimi S [1] also found a nodular predominance [57%], other studies, such as that by Lunardi *et al.,* reported a papular predominance [54.1%] [3].

2. Size and Location

The average size of the tumors observed was 2.9 cm [29 mm], with extremes ranging from 0.5 cm to 10 cm. This average size is higher than that reported by Destek et al. [14.1 mm] [4].

The most common location of benign skin tumors was the head and neck region [68%]. This trend was observed in all comparative studies, including those conducted in Turkey [43.4%] [4], by Lunardi et al. [59.2%] [3], and Karimi S [43%] [1]. Other locations in our series were the upper limb [14%], the trunk [13%], and the lower limb [5%].

3. Number of Lesions and Associated Signs

The single nature of the lesions predominated [76% of cases]. This result is similar to the series by Destek *et al.,* [82.5%] [4] and Karimi S [82%] [1]. However, it contrasts with the study by Lunardi *et al.,* which showed a predominance of multiple lesions [60.6%] [3].

The vast majority of patients [83%] presented with no associated signs. This high rate of asymptomatic lesions is consistent with the literature, notably Karimi S [89.5%] [1] and Lunardi *et al.,* [66%] [3]. Among the associated signs, pain [13%] was the most frequent, followed by superinfection and bleeding [2% each].

C. Paraclinical: Histological Diagnosis

Clinical diagnosis can often be sufficient to identify benign skin tumors, but histopathological examination is essential to confirm the diagnosis and rule out malignancy.

histopathological examination was performed on all patients, exclusively on excisional biopsies. This rate is comparable to the study by Karimi S [61%], but contrasts sharply with Destek *et al.,* [100% of biopsies] and Lunardi *et al.,* [only 11.4% of cases with confirmation].

From a histological point of view, cutaneous cysts were the most frequent lesions [47% of histological cases], followed by connective tissue tumors [37%].

D. Therapeutic Management

The treatment of benign skin tumors relies on several modalities [excision, cryotherapy, electrocoagulation, abstention].

In the experience of the Plastic and Aesthetic Surgery Department at the University Hospital of Tangier, treatment consisted exclusively of surgical excision under local anesthesia in almost all 344 patients [342 cases of surgical excision and 2 cases of additional excision]. Surgical excision was also the most frequently used therapeutic modality in Karimi S's study [81% of cases] [1], but in this latter series, other options such as cryotherapy and electrocoagulation were used.

Follow-up showed good patient satisfaction and no superinfection or tumor recurrence at the surgical site.

V. CONCLUSION

Our retrospective study of benign skin tumors at the University Hospital of Tangier allowed us to establish a detailed epidemiological and clinico-histological profile. Benign skin tumors are

predominantly observed in middle-aged women, presenting as nodules on the head and neck. Cutaneous cysts [particularly trichilemmal cysts] and lipomas are the most common entities. Although clinical diagnosis is crucial, histological examination remains fundamental for identifying subtypes and ruling out malignancy. Surgical excision, chosen as the exclusive therapeutic modality in our department, has demonstrated its efficacy with good postoperative results.

Compliance with ethical standards

Disclosure of conflict of interest

Authors declare no conflict of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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