

# A Five Year Retrospective Study of Keloidal Patterns at a Tertiary Skin Clinic in South West Nigeria

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## ABSTRACT

**INTRODUCTION:** A Keloid is a benign firm swelling arising from overgrowth of fibrous tissue following skin damage. It is usually seen in predisposed individuals and the pattern of inheritance observed is consistent with an autosomal dominant mode with variable expression. Although some epidemiological studies have shown that more Keloid patients are female, other studies show equal incidence of Keloids in male and female subjects.

**METHODOLOGY:** This is a retrospective study over a five year period (between January 2003 and December 2008) of patients presenting in a skin clinic with diagnosis of Keloids at Obafemi Awolowo University Teaching Hospital, Ile-Ife. The case files of identified patients were retrieved from the hospital records. A total of 77 cases were retrieved. Their bio-data, site of Keloid, presenting symptoms and treatment were noted.

**RESULTS:** There were 77 patients retrieved over the period of 5 years. There were 50 females (65%) and 27 male patients (35%). The greatest age range involved was 20-29 yrs accounting for 35% of cases. There were 106 sites affected because some patients had multiple site affectation. The greatest site of affectation is the anterior chest wall affecting twenty six (34%) out of 77 patients followed by head and neck 21 out of 77 (27%). The least affected area was the pelvis 3 out of 77.

**CONCLUSION:** Keloidal scars affect both sexes affecting more females in this series probably because females may be more exposed to beautification scars. Anterior chest wall continues to be a predilection site. Preventive measure may be helpful in Keloid prone individuals. Effective treatment options for Keloidal scars need to be looked for.

**Keywords:** Keloid, Pattern, Tertiary, Skin Clinic

## INTRODUCTION

A keloid is a benign firm swelling arising from overgrowth of fibrous tissue following cutaneous injury.<sup>1</sup> It affects the dark skinned races more often a fact which is little understood, higher melanocyte stimulating hormone activity is thought to play a role.<sup>2</sup>

Keloids are usually seen in predisposed individuals and follow some form of skin injury; occasionally no prior injury is identified.<sup>1</sup> This disruption of the epithelial cutaneous barrier from trauma, surgery, and other inflammatory processes leads to abnormal healing responses with deposition of collagen in the subcutaneous and dermal tissues. The predisposition to develop keloids can be inherited; autosomal dominant and autosomal recessive inheritance patterns have been recognized.<sup>1,2</sup>

Keloid treatment remains a challenge for dermatologists; this is due to its high rate of

recurrence after treatment.<sup>1</sup> The pattern of presentation, the age at affectation, the gender of the affected individual, the site affected, and the duration of symptoms prior to seeking treatment, can influence the course and treatment of this disease. This paper presents the pattern of presentation (age, sex, site(s) of affectation and associated symptoms) in a group of patients with keloids.

## METHODOLOGY

This is a retrospective study over a five year period, data were collated between January 2003 and December 2008 of patients presenting in a skin clinic with diagnosis of keloid at Obafemi Awolowo University Teaching Hospitals Complex Ile-Ife. Hypertrophic scars and Acne keloidalis nuchae were not included in this study.

The case files of identified patients were retrieved

from the hospital records. A total of 77 cases were retrieved and information accessed was documented. Patients' bio-data, presenting symptoms and the site of keloid presentation was noted. Information retrieved was reviewed and analyzed.

## **RESULTS**

Total number of patients seen over the five year period was 77. There were 50 females (65%) and 27 males (35%). The greatest age range involved was the 20-29 years age group accounting for 35% of cases. A total of 106 sites were affected, some patients had multiple site affectation. The anterior chest wall constituted the most frequently affected site. The least affected area was the pelvis 3 out of 77. There was family history in a significant number of patients.

## **DISCUSSION**

The word Keloid is derived from a Greek word Cheloides which means 'Crab's Claw'. Keloids are benign dermal tumors that arise as a result of aberrant wound healing. Clinically they appear as red, erythematous or skin colored swellings which are disfiguring. They may be pruritic, painful or may suppurate. Despite the plethora of treatment modalities available including surgical excision, intralesional triamcinolone, compression dressing, silicone sheet application, and even combination of these methods,<sup>5</sup> none has proven to have a high percentage of cure for all cases.<sup>6,7</sup>

There was a predominance of females compared to males in this study. Even though some data show no sex predilection with males and females being affected equally, hospital based researches have consistently shown a preponderance of females. This may be ascribed to more females presenting to the hospital to improve the cosmetic appearance of lesions or the fact that more females are exposed to beautification procedures like ear piercing/extra ear piercing.<sup>5</sup>

In this study Keloids was highest in the age range 20-29 years. This observation has been reported by other researchers. Lane et al found and noted that this age also coincided with the age when females get extra ear piercing, that the skin at this age has a firmer consistency, more tension and less elasticity.

All these factors are thought to contribute to keloids being more common in this age group compared with elderly skin.<sup>10</sup> The fact that exposure to trauma from shaving, acne, sporting activities are also commoner in younger people in their productive years may also be responsible for this observation.

The anterior chest wall was the most frequently affected site, in consonance with reports from other studies. It is thought that increased tension present on this area is responsible. Other predilection areas noted reported were exposed areas of the body where melanocyte activity is high. A higher melanocyte content of exposed body parts and increased melanocyte stimulating activity has been postulated as being responsible<sup>11</sup>.

Keloids have been noted to show a marked preference for the locations on the body that are constantly subjected to tension.<sup>12</sup> Keloidal scars therefore grow in the direction of greatest tension and the direction of tension on the anterior chest wall is horizontal because of the constant contraction of the pectoralis major muscle causing the lesion to acquire a butterfly or claw like shape.<sup>12</sup> (See Figure 1)

Auricular keloids are frequent on the earlobes usually following ear piercing in predisposed individuals. Nine out of the ten with earlobes affected were females as ear piercing is more common in females in area of study. (See Table 3, Figure 2). A Brazilian study found that post pierced lesion occurred more commonly on the posterior aspect of the ear and usually only one ear is involved despite the fact that both ears were pierced<sup>13, 14</sup>. The study concluded that this was due to the metallic backs of the earrings as 88% of those so affected wore earrings with metallic backs. Earring backs are foreign bodies that can be a trigger factor for keloid formation in predisposed individuals. Earrings and piercing jewellery are composed of steel alloys containing gold, niobium, titanium and nickel.<sup>15</sup> Nickel is the most common contact allergen and is associated with a high prevalence of allergic and inflammatory reactions in sensitive individuals.<sup>15</sup>

Acne keloidalis nuchae, not included in this study, describes keloidal papules or nodules associated with chronic follicular trauma from ingrown hairs in individuals with extremely curly hair and neck hairs common in the Negroid race. This follicular reaction

patterned keloids have not been shown to predispose patients to keloids on other parts of the body.

**CONCLUSION**

Keloidal scars form part of the cases presenting in skin clinics. It affects both sexes predominantly in between the second and third decades of life, with females presenting more often for treatment.

Greatest predilection areas like the chest wall could be as a result of constant tension and for earlobe keloid; metallic contents of earrings may be trigger factors in predisposed individuals. Preventive measures can be helpful in keloid prone individuals. Beautification piercing, elective surgical procedures should be done with caution in the third decade of life. More effective treatment options for Keloidal scars need to be made available.

AGE(YRS)	MALE	% MALE	FEMALES	% FEMALES	TOTAL	% TOTAL
0-9	0	0	3	3.9	3	3.9
10-19	2	2.6	2	2.6	4	5.2
20-29	11	14.3	16	20	27	35.1
30-39	4	5.2	8	10	12	15.6
40-49	1	1.3	4	5.2	5	6.5
50-59	1	5.2	5	6.4	9	11.6
60-69	4	5.2	4	5.2	8	10.4
>70%	4	1.3	8	10.4	9	11.7
	27	35.11	50	64.9	77	100

**TABLE 1: Age and Sex Distribution of 77 Patients with Keloidal Scars Over a 5 year Period.**

SYMPTOMS	MALE	FEMALE	TOTAL
Itching	10	27	37
Pain	6	16	22
Disfigurement	2	1	7
Swelling	14	14	28
Suppuration	1	1	2
Multiple symptoms	6	12	18

**TABLE 2: Presenting Symptoms 77 Patients With Keloidal Scars Over A 5-Year Period**

SITES OF AFFECTATION	MALE	FEMALE	TOTAL
Face	10	11	21
Ear lobes	1	9	10
Anterior chest	11	15	26
Upper limbs	5	13	18
Lower limbs	4	3	7
Breasts	0	7	7
Back	0	4	8
Abdomen	0	6	6
Pelvis	0	3	3
Multiple Sites	18	37	55

**Table 3: Sites of Affectation 77 Patients With Keloidal Scars Over a 5 Year Period**



Figure 1: Keloidal Scar On Chest Wall



Figure 2: Keloidal Scar In The Earlobe

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