Keloids and breast fibroadenomas in two black teenage girls

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ABSTRACT

Discuss the relationship between keloids and mammary fibroadenoma. Two teenage girls aged 15 and 19 had been operated on for breast fibroadenomas. Two years later, they consult for post-operative keloids. They have family's history of diabete or high blood pressure. The oldest have hyperandrogenism. The anamnesis in both cases recovers a contusional trauma of the breast, before the perception of the adenofibroma. Breast fibroadenomas and keloids have some common etiopathogenic characteristics. The combination of these two diseases may be relevant.

Key words: Keloid; Fibroadenoma; Breast; Trauma; Teenager

INTRODUCTION

Keloids are benign tumours of connective tissue that are formed as a result of a loss of substance or an inflammatory skin process and are abnormal in healing [1]. The etiopathogenesis of keloids is unknown [2]. Authors suggest immunological, genetic, hormonal and environmental mechanisms [3] as well as the identification of genetically favourable sites [2,4]. Stimulation of interleukins and dysregulation of growth hormone would predispose patients with keloids to vascular, metabolic and tumor pathologies [3-5]. Tumours associated with keloids are traditionally uterine fibroids [5]. It is this context of co-morbidity with uterine fibroids that has sparked interest in seeking a link between keloids and fibroadenomas in adolescent girls.

CASE REPORT

Case 1

A 15-year-old girl, referred by the gynaecology department for a keloid scar on her left breast. The scar was caused by the removal of a breast fibroadenoma 2 years earlier. The scar is quadrangular, 3.5 cm x 2.5 cm, hyperchromic, hard, bumpy and pruritic. The patient is in good general condition, the body mass index is 21 kg/m².

In the history there is a notion of contusional trauma prior to adenofibroma, a notion of hypertension in the mother, a regular menstrual cycle, menarche at 12 years of age, nulligest, she does not take estroprogestins.

Case 2

A 19-year-old girl consulted for a left breast keloid. The history of the scar would go back three years. The patient had undergone an excision of left breast fibroadenoma documented by pathology anatomy. The scar is hard, polypoid, measures 3 cm x 2 cm (Fig. 1) it is itchy and sensitive. The patient is in good general condition with a body mass index of 18 kg/m². She has documented hirsutism and functional ovarian cysts documented contemporary with hyperandrogenism. The history includes breast contusion, maternal diabetes. Menarche at 12 years old, she is nulligest, does not take estroprogestins.

DISCUSSION

These observations concern non-obese, nulligest adolescents whose particularity is the hormonal imbalance caused by puberty. Breast fibroadenoma is a benign fibroepithelial tumor characterized by the proliferation of glandular and stromal cells [6,7]. It is

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Figure 1: Keloids of breast after fibroadenoma ablation.

best described in Negroid or Mongoloid women aged 10 to 25 years [8,9]. Their pathogenesis is unknown; they are influenced by genetic and hormonal factors [10,11]. Keloid scars are benign connective tissue tumours that are formed from scarring anomalies [1]. Keloids are post-injury or more rarely spontaneous [4].

Genetic factors associated with endogenous and exogenous factors play a role in the formation of keloids [3,4,12]. Keloids can be localized or disseminated, they can be associated with high blood pressure, diabetes and uterine fibroids [5,13,14].

The association of keloids with uterine fibroids is proven but their association is not described with mammary fibroadenomas.

The arguments in favors of a relevant association are:

- The mammary gland has an ectodermal origin [15], it can be assumed that structures of the same embryonic origin share the same pathologies.
- The fibroblastic nature of the two pathologies [4,7].
- The disproportionate frequency of the two diseases in black populations [8,16].
- The hormone dependence of these two pathologies [6,10,13], the abundance of growth hormone receptors [10]. The abundance of giant juvenile forms [17-19].

The arguments for a fortuitous association:

- The relative banality for black subjects to make keloids [8,16].
- The existence of adenofibromas in Caucasian women [10] whose extreme rarity to develop keloids is known [12].

Two questions are worth asking:

- The role of age: Adenofibroma develops more frequently in adolescent girls [20]. We noted a case of adenofibroma in a 2-year-old girl [18], as well as giant forms in teenage girls [19]. Keloids have a higher average age of onset but their onset in adolescence is not uncommon [16].
- The role of trauma: Trauma is a circumstance found before symptoms. Its role in the pathogenesis of fibroadenoma can be discussed, with keloid being chronologically attributed to excisional surgery.

CONCLUSION

Several endogenous factors suggest that the association of keloids and breast fibroadenomas is relevant. This work should be further developed. It seems appropriate to prevent the appearance of keloids in breast surgery in general but particularly in adolescent women with fibroadenoma.

Consent

The examination of the patient was conducted according to the Declaration of Helsinki principles.

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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