Breast Pain in an Early Adolescent Male Without Gynecomastia

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ABSTRACT

Pubertal gynecomastia is the most common cause of breast symptoms in adolescent males, such as enlargement, nodules, or pain. We report the case of a 13-year-old adolescent with bilateral mastalgia secondary to a mechanical/traumatic factor in the absence of gynecomastia. The diagnostic presumption was based on key aspects of the medical history and physical examination. During the medical history, mechanical and traumatic factors related to mastalgia were assessed, which are often not evident initially. Physical examination of the areola–nipple complex helps differentiate between gynecomastia and lipomastia. Ultrasound is a complementary tool in doubtful cases.

Key words: adolescent, male, breast pain, gynecomastia, case reports.

Dolor mamario en unadolescente temprano sin ginecomastia

RESUMEN

La ginecomastia puberal es la causa más frecuente de síntomas mamarios en varones adolescentes, como aumento de tamaño, nódulos o dolor. Se informa el caso de un adolescente de 13 años con mastalgia bilateral secundaria a un factor mecánico/traumático y en ausencia de ginecomastia. La presunción diagnóstica se basó en puntos clave de la anamnesis y exploración física. En la anamnesis se evaluaron factores mecánicos y traumáticos de mastalgia, los cuales no suelen ser evidentes al inicio. El examen físico del complejo areola-pezón permite diferenciar entre ginecomastia y lipomastia. La ecografía es un recurso complementario en casos dudosos.

Palabras clave: adolescente, varón, dolor mamario, ginecomastia, informe de casos.

INTRODUCTION

Adolescent males commonly present with symptoms in the breast region, such as enlargement, the appearance of a mass, and, less frequently, pain. These symptoms are usually benign in origin, with pubertal gynecomastia being the most common cause.[1,2] The aim of this report is to describe the clinical evaluation of mastalgia in an adolescent without gynecomastia, caused by a repeated mechanical/traumatic factor.

CASE PRESENTATION

A 13-year-and-6-month-old male, with no relevant medical history, attended a routine health check-up. He was in the first year of secondary school, did not engage in extracurricular activities, and led a sedentary lifestyle. Positive findings on physical examination included overweight, with a body mass index of 24.5 kg/m² (97th percentile). On chest examination, the breast region showed a slight increase in size, without ptosis, with a conical appearance; palpation was suggestive of lipomastia (Fig. 1).

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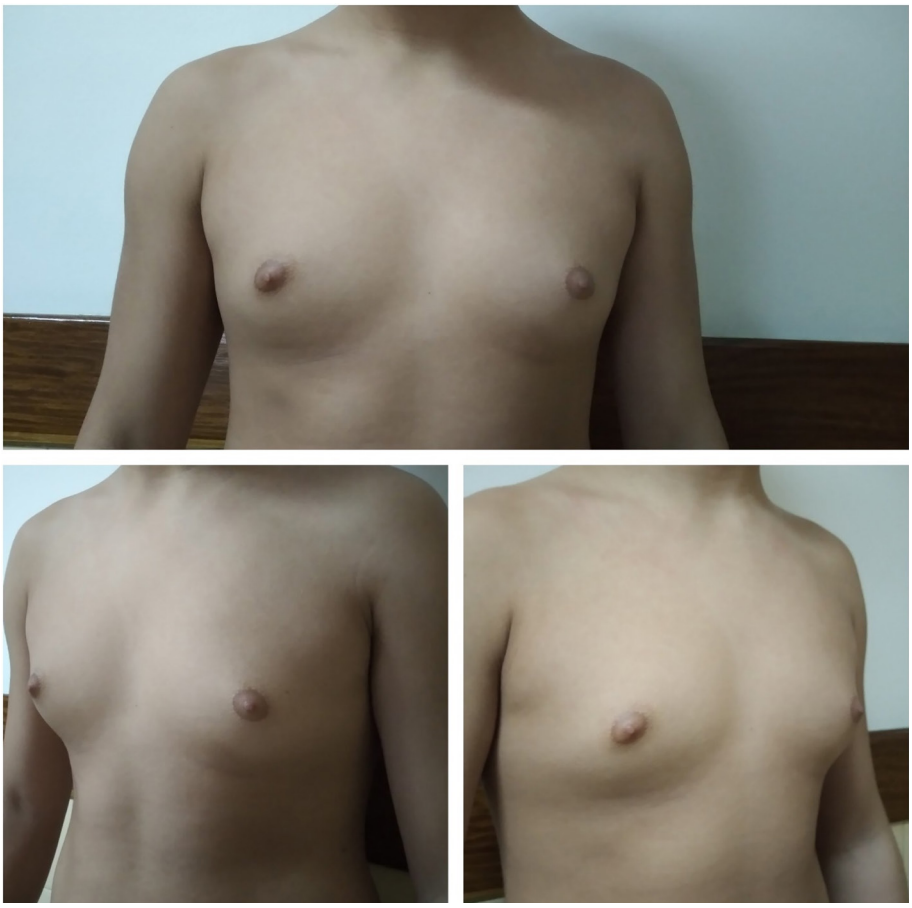

Figure 1. Chest appearance of a 13-year-old male. Bilateral prominent breast region with a conical appearance, without ptosis, consistent with lipomastia.

Genital examination revealed Tanner stage pubic hair (4/) 4 and genitalia (G) 3, with both testes measuring 8 mL.

At the end of the examination, the adolescent reported bilateral breast pain of several months' duration.

Expanded medical history: the pain had begun after the summer holidays, in the areolar region, with mild to moderate intensity and an intermittent course. He had previously consulted at another institution, where he was told that the mastalgia was "due to growth," although only a visual inspection of the chest had been performed without a complete physical examination.

The patient denied trauma or other symptoms. He reported no recent body changes other than the pubertal growth spurt. He had not used psychoactive substances or medications, nor did he use lotions, oils, or body creams. There was no family history of gynecomastia or endocrine disorders.

Targeted breast examination: no retroareolar masses were palpated. There were no skin changes, retraction, or nipple discharge, and no axillary lymphadenopathy was detected. A bilateral ultrasound of the pectoral and breast regions was requested, reporting: muscle fibers of normal shape and arrangement; subcutaneous tissue with preserved echotexture; no solid or cystic lesions identified; and axillary lymph nodes with normal sonographic features, without adenomegaly.

The ultrasound report and physical examination were consistent with lipomastia; therefore, no further diagnostic studies were requested. Given the absence of gynecomastia, mechanical and traumatic causes of mastalgia were reassessed. During a private interview, the patient was asked specifically whether anyone, including himself, had squeezed the areola or nipple. The adolescent reported that he and his classmates would pinch each other's nipples as a game. No bullying or other concerning situations were identified. He was advised to discontinue this practice, begin regular physical activity, and attend follow-up. The adolescent did not experience mastalgia again.

One year later, pubertal progression was documented without the development of gynecomastia, and with a body mass index of 23.1 kg/m² (85th percentile). Mild lipomastia with a conical appearance persisted. Genital examination showed Tanner stage PH 4 and G 4, with testicular volumes between 12-15 mL. Routine laboratory testing showed normal complete blood count, metabolic panel, and thyroid profile.

DISCUSSION

Breast pain in adolescent males is generally associated with the presence of pubertal gynecomastia; therefore, the initial evaluation should focus on confirming or ruling out this diagnosis.[1-4]

Male and female breast glands differentiate during puberty. In males, the nipple and areola are smaller. The breast is composed essentially of subcutaneous fat and a remnant of subareolar ductal tissue. Lobules and ducts are not developed. Size and shape are variable and depend on age, muscle mass, subcutaneous fat, and constitutional characteristics. The nipple is composed of muscular and epithelial tissues, surrounded by the areola, which is rich in apocrine and sebaceous (Montgomery) glands. Vascularization is dense, with an extensive arterial, venous, and lymphatic network. There are numerous individual variations in the distribution of nerves to the breast, particularly to the nipple and areola. From a histological standpoint, innervation is similar to that of other areas of the skin.[5,6]

Gynecomastia is defined as the benign proliferation of glandular breast tissue in males during puberty, not associated with an underlying pathological cause.[3] It is most common between 12 and 13 years of age, typically at Tanner stage 3 and with a testicular volume of 6–10 mL.[7,8] Theis clinical and includes:[3,4] 1) **Medical history:** changes in breast skin, nipple discharge, characteristics of the pain, and duration of symptoms; as well as general symptoms or associated conditions (infections, trauma), exposure to medications or substances (systemic or topical) related to the development of gynecomastia, and family history of gynecomastia or endocrine disorders. 2) **Physical examination:** includes palpation of the nipple-areolar complex, with the aim of distinguishing between glandular tissue proliferation (gynecomastia), fat deposition (lipomastia), and other nodular formations of different origins. The evaluation is completed with a genital examination and pubertal assessment.

Mechanical and traumatic factors, as causes of mastalgia or other breast-related conditions, are not always evident during the initial evaluation. In this case, the patient was an early adolescent who did not associate his mastalgia with the practice of pinching nipples among peers, or perhaps felt embarrassed to disclose it. During his first consultation at another institution, the symptom was assumed to be secondary to gynecomastia ("growth"), but the appropriate physical examination was not performed to confirm this diagnosis.The evaluation conducted in our department ruled out the presence of gynecomastia and pointed toward a diagnosis of lipomastia; therefore, the pain had to have another cause. A detailed interview, conducted with respect for the adolescent's privacy, modesty, and pace, made it possible to establish a diagnosis of mastalgia of mechanical or traumatic origin. A diagnostic hypothesis based on key elements of the medical history and physical examination is essential in the evaluation of breast symptoms in adolescent males. It should be emphasized that comprehensive health evaluation allows routine encounters with the healthcare system to be used as opportunities for engagement and intervention[9]. A private interview conducted within a framework of confidentiality provides an opportunity to establish rapport and to ensure a space for listening and support. The willingness of the healthcare team to listen, recognize, and accept each adolescent in their individuality is essential to ensuring access to health services.

Previously, a case was reported of an 11-year-old boy with sudden breast enlargement and pain; ultrasound showed a subareolar hematoma, and the medical history revealed that the adolescent had experienced repeated school bullying involving nipple pinching[10]. Chronic mechanical and traumatic stimuli have also been associated with the development of prepubertal gynecomastia, as reported in a child who worked carrying melons[11] and in another child who repeatedly squeezed and nibbled the nipple as a stereotyped behavior[12]. Mastalgia may also occur in dermatoses associated with sports-related activities, due to direct trauma or friction. A characteristic condition is "runner's nipple" or "cyclist's nipple," in which the nipple is injured due to friction with sports clothing[13]. Other causes of pain include Montgomery cyst[4], skin and soft tissue infections, hematomas[6], costochondritis, and Tietze syndrome[14].

CONCLUSION

Adolescent males commonly present with breast-related symptoms. In the absence of pubertal gynecomastia, various mechanical factors and repeated trauma may be associated with mastalgia and with the development of breast nodules, such as hematomas or prepubertal gynecomastia. This case highlights the importance of a thorough medical history and a comprehensive approach in adolescent care.

Ethical considerations: The protocol for this case report was approved by the Institutional Ethics Committee (PRIISA BA 14346) and was conducted in accordance with the principles of the revised Declaration of Helsinki.

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