I. INTRODUCTION

Gynecomastia is a benign unilateral or bilateral increase in glandular tissue in men with significant aesthetic and psychological repercussions. In some situations, it might be a symptom of an underlying condition. The management of gynecomastia is mainly based on an extensive etiological analysis made of an exhaustive endocrine assessment, and a radical or conservative adapted treatment allowing to obtain the best aesthetic result.

Through literature review some clinical cases, we establish different etiological, clinical aspects and management of gynecomastia.

Keywords: Adipose tissue, gynecomastia, glandular, liposuction, mastectomy, round block.

II. CASE REPORT

A. Case 1

A 19-year-old patient with bilateral gynecomastia evolving for 1 year with a history of Hodgkin's lymphoma 5 years ago Treated by chemo and radiotherapy in complete remission, the examination shows a bilateral increase in the volume of the breast, without other associated signs. A biological assessment was carried that showed the following results.

Prolactinemia = 11.9 ng/ml (3–27) Testosterone=6.96 ng/ml (2.60–8), Beta HCG = negative, LT4 = 1.11 ng/dl (0.82–1.63), Alpha Fetoprotein=1.2 ug/l.

Breast ultrasound did not show any solid or cystic circumscribed anomaly, the mammography did not show any anomalies, the epididymo-testicular ultrasound normal. Surgical treatment was indicated by subcutaneous mastectomy thought a lower hemi-areolar incision associated with liposuction. A drain was put in place and kept for 4 days.

The postoperative course was without complications.

Fig. 1. 19-year-old patient with bilateral gynecomastia treated by subcutaneous mastectomy.
B. Case 2

24-year-old patient with bilateral gynecomastia evolving for 2 years with no particular pathological history. A biological assessment was carried out showing no abnormality, the epididymo-testicular ultrasound was normal, breast examination and mammography showed a bilateral increase in the volume of the breast of an adipose appearance, without other associated signs. The treatment consisted of liposuction alone, with postoperative compression. No complications were noted post operatively.

C. Case 3

A 45-year-old patient with no particular pathological history presenting with right unilateral gynecomastia.

The biological examination showed no abnormality, the epididymo-testicular ultrasound was normal, breasts examination as well as the mammography showed a unilateral increase in the volume of the right breast made of both glandular and adipose tissue, with no other associated signs. The treatment consisted of a subcutaneous mastectomy associated with a round block to help reduce the cutaneous excess. No complications were noted post operatively.

III. DISCUSSION

Gynecomastia is a benign unilateral or bilateral increase in glandular tissue volume in men, very common during puberty with a prevalence ranging from 32 to 65% [1]. It is generally responsible for significant psychological repercussions. The diagnosis of gynecomastia will first allow to distinguish between real gynecomastia and pseudo gynecomastia which corresponds to a benign increase in the volume of the breast in men secondary to an adipose deposit also called: adipomastia [3], [4].

There are different etiologies that can cause gynecomastia [1]-[4], [9].

A. Physiological Gynecomastia

- Found in newborns which is generally secondary to the persistence of the action of estrogens and progesterone.
- Pubertal gynecomastia which spontaneously regresses in the majority of cases.
- Gynecomastia in the elderly, after 70 years often linked to hypogonadism [1]-[3].

B. Pathological Gynecomastia [5], [6]

That may be secondary to:

- Breast cancer, although rare in men, cannot be eliminated, especially in unilateral gynecomastia.
- Insufficient testosterone synthesis or its action (with or without secondary increase in estrogen production).
- An increase in estrogen production.
- Hyperprolactinemia.
- Hyperthyroidism.
- The action of drugs (treatments with imidazoles (metronidazole, Ketoconazole, miconazole), certain chemotherapies (vincristine, busulfan, BCLU...).
- Alcohol, hashish, marijuana In 50% of cases gynecomastia remains idiopathic [8].

When a patient comes to the consultation with an increase in breast volume, the patient's history must first be determined, the duration and evolution of gynecomastia, the presence of pain or tenderness, a history of liver disease, kidney disease, hyperthyroidism or hypogonadism [8], must be checked. It is also necessary to look for a notion of drug intake (prescribed drugs, steroids, supplements, etc.) as well as recent weight loss or gain. It is necessary to look for a family history of gynecomastia or breast cancer [3], [6].
The clinical examination remains essential [1] and must be carried out bilaterally and symmetrically, looking for cutaneous signs, retraction of the nipple, a palpable mass or nipple modification. Palpation will also make it possible to distinguish between glandular, adipose or mixed character. This clinical examination must be completed by a breast ultrasound and a mammography [1], [6]. The testicular palpation is very important [1] and allows in association with the testicular ultrasound to eliminate a testicular tumor. A complete biological assessment makes is important to look for an endocrine cause, made of [1]:

- LH, FSH, T, E2, SHBG
- b-hCG
- TSH
- Prolactin
- Hepatic function: GOT, GPT, albumin
- Renal function: Urea, creatinine.

A clinical classification allows us to differentiate three situations:
- Flexible forms accessible to liposuction.
- Moderately flexible forms where liposuction will always be attempted.
- Dense forms where a mastectomy must be performed immediately.

The management of gynecomastia can be based on medical treatment [1], [4], when an etiology is identified, or on surgical treatment which can be radical or conservative.

C. Medical Treatments

Medical treatments used are:
- Anti-estrogens (clomiphene citrate, tamoxifen)
- Androgens (Dihydrotestosterone, Danazol, Testolactone)
- Aromatase inhibitors such as Letrozole and Anastrazole.

D. Surgical Treatment [1],[3],[4]

Depends on the severity of the breast enlargement, the presence of fatty tissue, and the preference of the surgeon.

The purpose of the treatment is to:
- Restore normal anatomy as good as possible
- By reducing breast volume by excision and/or liposuction.
- By reducing excess skin (Skin excision/lipo aspiration)
- By reducing excess skin (Skin excision/lipo aspiration)

1) Subcutaneous Mastectomy [9]

Through an Incision:
- Inferior areolar hemi (Most often used) Glandular or mixed gynecomastia.
- Peri areolar can also correct an areola wide and/or excess skin without significant ptosis.

2) Liposuction [7]

In flexible forms and accessible to liposuction after infiltration and fan-shaped liposuction.

3) Mastectomy Associated with Liposuction

Is the most used technique especially for dense or moderately soft forms. Several complications can occur [10].

Immediately such as: hemorrhages and hematomas, seromas are rare, areolar necrosis and sepsis (exceptional).

Secondarily aesthetic problems such as excess reduction: cupuliform depressions, asymmetry by default of reduction which requires additional surgery, or hypertrophic scars, or even keloids. Compression contributes a lot in complications prevention.

IV. CONCLUSION

Gynecomastia is usually a benign condition, that causes a big discomfort for men with psychological repercussions, but the right examination and biological assessment is necessary to eliminate a secondary cause, that can be treated.

REFERENCES

[1] Akgül S, Kanbur N, Derman O. Pubertal gynecomastia: what about the remaining 10%?. Journal of Pediatric Endocrinology and Metabolism. 2014; 27(9–10): 1027-1028.
[2] Kanakis GA, Nordkap L, Bang AK, Calogero AE, Bártfai G, Corona G, et al. EAA clinical practice guidelines—gynecomastia evaluation and management. Andrology. 2014.
[3] Baumann K. Gynecomastia - Conservative and Surgical Management. Breast Care. 2018; 13: 419-424.
[4] Bailey SH, Guenther D, Constantine F, Rohrich RJ. Gynecomastia management: an evolution and refinement in technique at UT Southwestern Medical Center. Plast Reconstr Surg Glob Open. 2016; 4: e734.
[5] Pacenza NA, Aszpis SM, Suárez SM, Pragier UM, Usher JGS, Vásquez Cayoja M, Ibarrieta S, et al. Clinical and Etiological Aspects of Gynecomastia in Adult Males: A Multicenter Study. BioMed Research International. 2018: 8364824–8364827.
[6] Harold E. Carlson. Approach to the Patient with Gynecomastia. The Journal of Clinical Endocrinology & Metabolism. 2011; 96(1): 15-21.
[7] Oh YH, Lee SH. Liposuction Using Wall Suction and Portable Suction in the Treatment of Gynecomastia. Indian Journal of Surgery. 2021: 1-7.
[8] Whitehead IJ, Fernandes L, Haris O, Chagla L. Gynaecomastia: a cosmetic concern or a concerning clinical sign?. The Annals of The Royal College of Surgeons of England 2010; 92(8): e184-e186.
[9] Bailey SH, Guenther D, Constantine F, Rohrich RJ. Gynecomastia Management. Plastic and Reconstructive Surgery - Global Open. 2016; 4(6): e734.
[10] Reinehr T, Kulle A, Barth A, Ackermann J, Lass N, Holterhus PM. Sex Hormone Profile in Pubertal Boys With Gynecomastia and Pseudogynecomastia. J Clin Endocrinol Metab. 2020; 105(4).