

Gynecomastia: Epidemiological, Clinical and Therapeutic Aspects of 68 Cases

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Abstract

Gynecomastia is the most common mammary pathology in men. It corresponds to a benign hypertrophy of the mammary gland. It results from an imbalance between testosterone and estrogen.

We conducted a retrospective and descriptive study between September 1999 and October 2018, including all patients followed for gynecomastia in the Plastic, Reconstructive and Aesthetic Surgery Department of Dakar. The main objective was to evaluate the surgical management of patients.

We collected 68 gynecomastia records representing 1.3% of the department's consultations. The average age was 22.6 years with extremes of 4 and 47 years. The majority of our patients consulted late with an average delay of 3 years and a half. The interrogation found a urogenital pathology in 9% of cases and a drug cause in 3% of cases.

Psychological discomfort was present in all patients. Pain was noted in 7% of cases and seepage in 4%. Gynecomastia was bilateral in more than half of cases and the left side predominated in unilateral forms. Stage IIa Simon was the most common, found in 47% of cases. Few additional examinations were necessary.

The surgical intervention rate was 48% of the affected breasts. Isolated mastectomy was performed in 75% of cases. Complications were benign in the vast majority of cases and only 1 case of under-achievement was noted.

Gynecomastia is a benign pathology, having a very important psychological impact. Its management is mainly surgical and leads to a satisfactory aesthetic result.

INTRODUCTION

Definition

Gynecomastia is defined as an increase of breast volume in men, a consequence of hyperplasia of the breast tissue. It results from an imbalance between testosterone and estrogen, in favor of the estrogen. Most often idiopathic, it requires a complete etiological assessment to eliminate an organic cause.

Gynecomastia is a benign pathology. But, on the other hand, it has a heavy psychological impact since it is profoundly unsightly.

The purpose of this study is to report our experience in its surgical management.

MATERIAL AND METHODS

We have listed 68 cases of gynecomastia. Taking into account the bilateral attacks, there were a total of 108 breast hypertrophies.

All patients with gynecomastia who consulted in the Plastic and Reconstructive Surgery Department of Aristide Le Dantec Hospital in Dakar during the study period were included.

We conducted a descriptive retrospective study over a 19-year period, from September 1999 to October 2018.

To carry out this study, we used the medical records of the patients seen in consultation and the digital database of the Department of Plastic, Reconstructive and Aesthetic Surgery of Dakar.

The studied parameters were epidemiological, clinical, therapeutic and evolutionary. The information collected included: number of patients, age and history, duration of gynecomastia evolution, Simon's stage, laterality, sensitivity and seepage, hormonal and imaging results, the time of intervention in operated patients, the surgical technique used, the existence of complications, and the aesthetic results.

The data entry and analysis were performed on Excel® 2015 computer software.

RESULTS

We collected 68 gynecomastia files representing 1.3% of the department's consultations. The average age was 22.6 years with extremes of 4 and 47 years. The majority of our patients consulted late with an average delay of 3 years and a half.

The interrogation found a urogenital pathology in 9% of cases and a drug cause in 3% of cases.

Psychological discomfort was present in all patients. Pain was noted in 7% of cases and seepage in 4%. Gynecomastia was bilateral in more than half of cases and the left side predominated in unilateral forms. Stage IIa of Simon (see Figures) was the most common, found in 47% of cases.

Few additional examinations were necessary (Table 1).

Table 1

Distribution of patients according to the results of hormonal assays

Testosterone	Estradiol	Prolactin	T4
High	3	1	0
Normal	16	8	7
Low	1	0	0

The surgical intervention rate was 48% of the affected breasts (Table 2). Isolated mastectomy was performed in 75% of cases.

Table 2

Distribution of gynecomastia according to the surgical technique used

Intervention	Number of cases	Percentage
Isolated mastectomy	39	75%
Isolated liposuction	1	2%
Round-block	8	15%
Thorek	2	4%
« T » inversed	2	4%
Total	52	100%

Complications (Table 3) were benign in the vast majority of cases and only 1 case of under-achievement was noted.

Table 3

Distribution according to the different early complications

Complications	Number	Percentage
Hematoma	2	17%
Seroma	6	50%
Suppuration	1	8%
Failure	2	17%
Partial necrosis	1	8%
Total	12	100%

Figure 1

Right Gynecomastia (photo SCPRE-HALD)

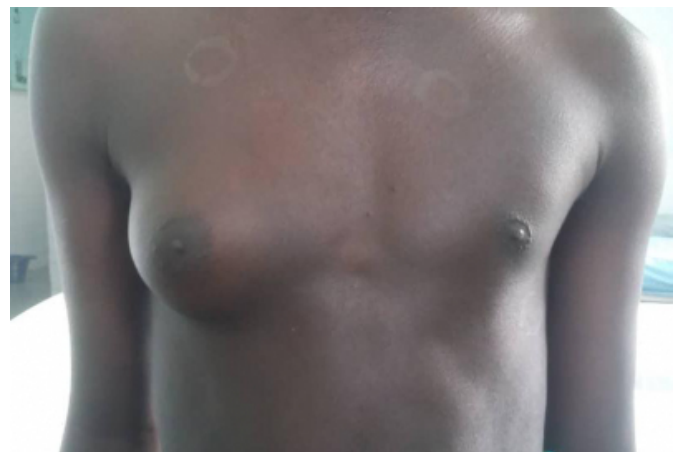


Figure 2

Gynecomastia stage IIa of Simon (photo SCPRE-HALD)

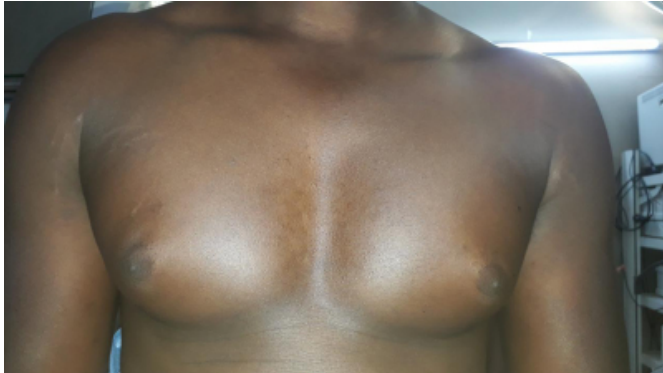


Figure 3

Gynecomastia stage IIa of Simon (photo SCPRE-HALD)



Figure 4

Gynecomastia stage III of Simon (photo SCPRE-HALD)



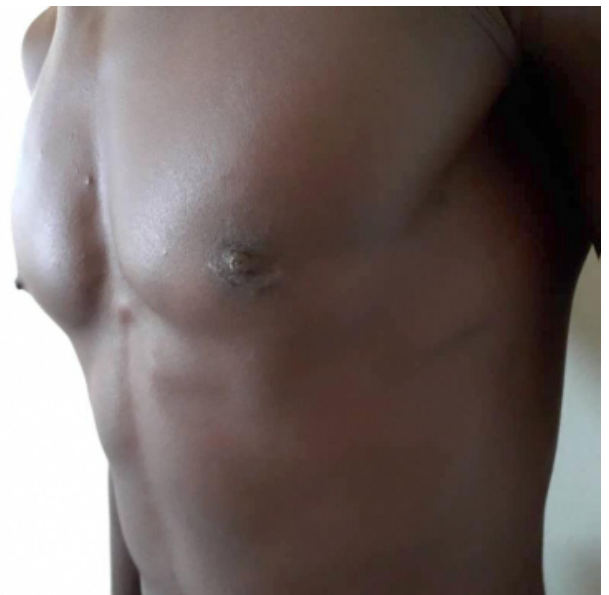
Figure 5

Gynecomastia stage III: preoperative image (left); image after healing (right) (photo SCPRE-HALD)



Figure 6

Postoperative image of left gynecomastia stage I (photo SCPRE-HALD)



DISCUSSION

In our department, consultations for gynecomastia accounted for 1.3% of our activity. This prevalence was 0.93% in the study of Sidibé [34] in Dakar as well as that of Ngaleu [10] in Mali.

The annual incidence (Table IV) is 3.6 in our study, and is similar to that found in other series (Table 1). This low consultation rate can be explained by several factors as social discomfort [16,25], and the lack of financial means [27].

Table 4

Incidence of gynecomastia in different studies

Study	Incidence	Population	Period of study
Sidibé [34]	1,9	30	16 ans
Ngaleu [10]	3,4	17	5 ans
Ouezzani [28]	2	16	8 ans
Nakade [26]	4	20	5 ans
Notre étude	3,6	68	19 ans

The average age of our patients is 22.6 years old. We did not find newborns or patients over 50 in the cohort. This trend is found in many other studies (Table VI). Gynecomastia is often a source of social exclusion [16]. By modifying the patient's perception of himself, it also causes a disorder of sexual identity and thus constitutes a factor of self-depreciation [16, 74].

Table 6

Age of patients in different studies

Studies	Population	Mean age (years)	Extremes (years)
Ngaleu [10]	17	25,9	[12 - 57]
Nakade [26]	20	25,6	[22 - 30]
Bchir [2]	35	36,6	[21 - 66]
Sidibé [36]	30	22	[14 - 38]
Tolba [39]	75	22,5	[14 - 37]
Our study	68	22,6	[04 - 47]

Teenage gynecomastia is an essentially idiopathic pathology [36,29]. In several studies, gynecomastia was essential (Table VII). This was the case in 86% of our patients. Only one case of gynecomastia secondary to taking ARV was found and 8 patients were overweight.

Table 7

Percentage of essential gynecomastia in different studies

Studies	Essential gynecomastia	Population of study
Vasseur [40]	75 %	52
Ngaleu [10]	18 %	17
Ouezzani [30]	75 %	16
Our study	86 %	68

We noted a predominance of bilateral forms, found in more than half of the cases. This trend is confirmed in several cohorts (Table VIII). It conforms to the essentially hormonal etiology. The evolutionary stage was defined according to Simon's classification. It gave the advantage of a clinical classification directly impacting the surgical indication [30]. Stage IIa was predominant in our patients as in Vasseur [40]

in Lille (Table VIII).

Table 9

Patient Distribution by Simon's Stages in Different Studies

Studies	Stage I	Stage IIa	Stage IIb	Stage III
Amrani [1]	23	50	-	27
Bchir [2]	23	49	-	28
Ouezzani [30]	50	31	-	19
Vasseur [40]	35	42	17	6
Our study	27	40	9	10

Breast flow was present in 5% of our patients. It was found in 18.5% of Sidibé patients [36].

Breast imaging confirmed the lesion and indicated the importance of adipose tissue in the 18 cases where it was requested. The achievement rate was 32% in Tolba [39] in Egypt and the results were all normal. Its interest lies mainly in the search for tumor lesion, whether mammary or not. On the other hand, it must be guided by a careful clinical examination and oriented according to the results of this one.

The exploration of a gynecomastia may require the achievement of a hormonal assessment in the context of an etiological research [27]. It was performed in 28% of the cases in our study and in 33% for the Tolba study [39]. The results showed that 86% of our patients had idiopathic gynecomastia. However, complementary examinations, especially hormonal ones, have very little influence on the surgical management of gynecomastia, especially for older forms and bulky gynecomastia [36, 29]. These are costly examinations, difficult to perform in our context and delaying the care of patients.

Surgery is therefore indicated for a large part of gynecomastia. This indication is made from the outset for advanced forms and as a complement in all other forms to support the aesthetic and psychological impact [6]. It finds its place all the more because medical treatment is, for most authors, an ineffective therapeutic method whose results are far and uncertain [30, 40, 1,2].

The surgical intervention rate of 48% observed in our series is relatively low. Surgical indications for gynecomastia are now well codified. Surgery must meet an aesthetic imperative with an important psychological impact. The goal for the surgeon will therefore be to restore a male aspect to the patient's thorax, at the cost of the least visible scars and the most aesthetic possible [6, 27, 12]. This management is based on three axes: mastectomy, lipoaspiration and skin

plastification. They are performed in isolation or in combination for a better result [27,3]. Operative techniques are also different, depending on the size of the gynecomastia and the importance of the cutaneous component.

In cases of minor gynecomastia, the operative indication is either liposuction or subcutaneous mastectomy, or the two associated procedures [27]. We performed one liposuction and 39 isolated mastectomy, which is a low use of liposuction compared to other authors (Table X).

Table 10

Share of different types of surgery in different studies

Studies	Isolated Liposuction	Isolated Mastectomy	Liposuction and mastectomy	Round-Block	Other plasties
Vasseur [40]	13	33	6	0	1
Tolba [39]	20	70	36	6	4
Bourra [5]	8	3	0	4	0
Our study	1	39	0	8	4

Routine liposuction, prior to mastectomy, which limits postoperative bleeding, infiltration of cold serum supplemented with adrenaline-treated lidocaine, good intraoperative haemostasis, nipple padding, and thoracic corset are all important measures that significantly reduce this type of complication [9, 27, 39, 30, 6].

Surgery of the major forms of gynecomastia exposes to more serious complications, which make the aesthetic prognosis more mixed [27, 39]. They are type of dropping, invagination or necrosis. They also increase the risk of occurrence of suppuration because they lengthen the operating time. All these reasons must lead to the surgical procedure as early as possible, to reduce the risk of complications.

We noted a post-operative satisfaction rate of 98% after an average follow-up of 4 years. Only 2 cases of insufficient resection, in the same patient with stage III gynecomastia, were recorded. Ouezzani from Morocco [71] reported a satisfaction rate of 100% after an average decline of 4 years. Similarly, for many authors, surgical treatment provides optimal satisfaction in the management of gynecomastia [27, 34, 39, 30, 29, 40, 5].

References

1.Amrani Z. Gynécomastie : à propos de 30 cas. Annales d'Endocrinologie. 2012;73(4):366-367.
 2.Bchir N, Jaidane A, Mahjoubi S, Oueslati I, Ouertani H. Gynécomastie : à propos de 35 cas. Annales

d'Endocrinologie. 2017;78(4):379.
 3.Benelli L. A new periareolar mammoplasty: the "round block" technique. Aesthetic Plast Surg. 1990;14(2):93-100
 4.Bonte A, Guerreschi P, Duquenois-Martinot V. Gynécomastie : techniques chirurgicales et indications. EMC - Techniques chirurgicales - Chirurgie plastique, reconstructrice et esthétique 2013;8(3):1-9 [Article 45-668-D].
 5. Bourra K, Cherkab L, Bensaida L, El Mazouz S, Gharib N, Abassi A et al. Prise en charge des gynécomasties. Maroc Medical 2012;34(4):261-6.
 6.Casanova D, Magalon G. [Surgical treatment of gynecomastia]. J Chir (Paris). 1997 Jul; 134(2): 76-9.
 7.Coleman WP. Fat transplantation. Dermatol Clin. 1999 Oct;17(4):891-8, viii
 8.Decaroli MC, Rochira V. Aging and sex hormones in males. Virulence. 2017 07 4;8(5):545-70.
 9.Decoux-Poullot AG, Chignon-Sicard B, Hufschmidt K, Chevalier N. Gynécomasties. EMC - Endocrinologie-Nutrition 2018; 15(4): 1-14 [Article 10-034-G-10].
 10.Djeugoué Ngaleu P.Contribution à l'étude de la gynécomastie hospitalière à Bamako au Mali [thèse]. Bamako (Mali) : Université de Bamako ; 2011.
 11.Eren E, Edgunlu T, Korkmaz HA, Cakir ED, Demir K, Cetin ES, et al. Genetic variants of estrogen beta and leptin receptors may cause gynecomastia in adolescent. Gene. 2014 May 15;541(2):101-6.
 12. Fabiel-Boulard A, Fabre G, Gangloff D, Grolleau JL, Chavoain JP. Gynécomastie. EMC - Techniques chirurgicales - Chirurgie plastique reconstructrice et esthétique 2006, 45-668-D.
 13.Fruhstorfer BH, Malata CM. A systematic approach to the surgical treatment of gynecomastia. Br J Plast Surg. 2003 Apr;56(3):237-46.
 14.Gautier D, Lasfraque JJ, Lejeune J, Drieu M, Fromantin M. Gynécomasties de l'adulte jeune. Stratégie diagnostique : réflexion à propos de 80 observations. Rev Fran Endocrinol Clin 1982; 23:235-41.
 15.Henley DV, Lipson N, Korach KS, Bloch CA. Prepubertal gynecomastia linked to lavender and tea tree oils. N Engl J Med. 2007 Feb 1;356(5):479-85.
 16. Herlin C, Bigorre M, Sultan C, Jeandel C, Paris F, Captier G. Gynécomastie de l'adolescent : prise en charge médico-chirurgicale. EMC - Archives de pédiatrie 2012;19:64-65.
 17.Iglesias P, Carrero JJ, Díez JJ. Gonadal dysfunction in men with chronic kidney disease: clinical features, prognostic implications and therapeutic options. J Nephrol. 2012 Jan-Feb;25(1):31-42.
 18.Johnson RE, Murad MH. Gynecomastia: pathophysiology, evaluation, and management. Mayo Clin Proc. 2009;84(11):1010-1015.
 19.Kinsella C, Landfair A, Rottgers SA, Cray JJ, Weidman C, Deleyiannis FW, et al. The psychological burden of idiopathic adolescent gynecomastia. Plast Reconstr Surg. 2012 Jan;129(1):1-7.
 20.Krassas GE, Poppe K, Glinoe D. Thyroid function and human reproductive health. Endocr Rev. 2010 Oct;31(5):702-55.
 21.Kreithen J, Caffee H, Rosenberg J, Chin G, Clayman M, Lawson M, et al. A comparison of the LeJour and Wise pattern methods of breast reduction. Ann Plast Surg. 2005 Mar;54(3):236-41; discussion 241-2
 23.Lejour M. Vertical mammoplasty: update and appraisal of late results. Plast Reconstr Surg. 1999 Sep;104(3):771-81; discussion 782-4.
 24.Lanitis S, Starren E, Read J, Heymann T, Tekkis P, Hadjiminis DJ, et al. Surgical management of

- Gynaecomastia: outcomes from our experience. *Breast*. 2008
25. Morselli PG. "Pull-through": a new technique for breast reduction in gynecomastia. *Plast Reconstr Surg*. 1996 Feb;97(2):450-4.
26. Nakade DV, Zade M, Mehta J, Shahane P, Gupta S. Gynecomastia our surgical experience using liposuction and minimal invasive surgical excision and its psychological benefits to young patients. *Int J Res Med Sci* 2017;5(12):5424-31.
27. Nordt CA, DiVasta AD. Gynecomastia in adolescents. *Curr Opin Pediatr*. 2008 Aug;20(4):375-82.
28. Nuttall FQ, Warriar RS, Gannon MC. Gynecomastia and drugs: a critical evaluation of the literature. *Eur J Clin Pharmacol*. 2015 May;71(5):569-78.
29. Ndiaye A, Sankale AA, Ndiaye L, Foba L. Surgical Treatment Of Major Gynecomastia: A report of 2 cases. *Int J Plast Surg* 2018;13(1):1-5.
30. Ouezzani S, Oufkir A, Mazouz S, Gharib NE, Belmahi AM. Le traitement chirurgical des gynécomasties. *Maroc Médical* 2004;26(4):262-6.
31. Sansone A, Romanelli F, Sansone M, Lenzi A, Di Luigi L. Gynecomastia and hormones. *Endocrine*. 2017 Jan;55(1):37-44.
32. Sarkar A, Bain J, Bhattacharya D, Munian K, Dutta G, Naiyer G, et al. Role of combined circumareolar skin excision and liposuction in management of high grade gynecomastia. *Journal of Cutaneous and Aesthetic Surgery*. 2014;7(2):112
33. Saltzstein D, Sieber P, Morris T, Gallo J. Prevention and management of bicalutamide-induced gynecomastia and breast pain: randomized endocrinologic and clinical studies with tamoxifen and anastrozole. *Prostate Cancer Prostatic Dis*. 2005;8(1):75-83.
34. Sankale AA, Ndiaye L, Ndiaye A, Touré C. Traitement chirurgical des gynécomasties. *Revue Africaine de Chirurgie et Spécialités*. 2011;4(8) :32-35.
35. Sloand E. Pediatric and adolescent breast health. *Lippincotts Prim Care Pract*. 1998 Mar-Apr;2(2):170-5
36. Sidibe EH. Les gynécomasties à Dakar (à propos de 30 cas). *Andrologie* 2001;11:63-8.
37. Sinclair M, Grossmann M, Gow PJ, Angus PW. Testosterone in men with advanced liver disease: abnormalities and implications. *J Gastroenterol Hepatol*. 2015 Feb;30(2):244-51.
38. Thorek M. Possibilities in the reconstruction of the human form 1922. *Aesthetic Plast Surg*. 1989;13(1):55-8.
39. Tolba AM, Nasr M. Surgical Treatment of Gynaecomastia: A Prospective Study in 75 Patients. *Surgical Science* 2015;6:506-17.
40. Vasseur C, Martinot V, Hodin E, Patenotre P, Pellerin P. Gynécomastie. Prise en charge diagnostique et thérapeutique : A propos de 52 cas. *Ann Chir* 1998;52(2):146-57.
41. Wray R, Hoopes J, Davis G. Correction of extreme gynecomastia. *British Journal of Plastic Surgery*. 1974;27(1):39-41.
42. Zachmann M, Eiholzer U, Muritano M, Werder EA, Manella B. Treatment of pubertal gynecomastia with testolactone. *Acta Endocrinol Suppl (Copenh)*. 1986;279:218-26.

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