Gynecomastia is defined as the abnormal growth of glandular breast tissue in males. Historically, it was first described when photos were taken of Eunuchs of the Chinese courts. For centuries, castrated males or Eunuchs staffed the Chinese courts and many exhibited gynecomastia.

The pathophysiology behind gynecomastia is thought to be due to estrogen excess, testosterone and androgen deficiency, an increased estrogen to testosterone ratio, or through the peripheral conversion of testicular or adrenal precursors to estrogen by the enzyme aromatase. Physiologic gynecomastia occurs during three different time periods in a male’s life. These periods include neonatal, adolescence, and during senescence. During the neonatal period, gynecomastia develops secondary to the effects of placental estrogens on the infant and usually regresses in a few weeks. During adolescence, it occurs in two thirds of young men at puberty and usually regresses within two years. However, in approximately 10% of teenage males, gynecomastia does not resolve and is significant problem for these young men. During senescence, gynecomastia occurs in a large percentage of aging men, and is due to the increased conversion of androstenedione to estrone.

Pseudogynecomastia is the increase in the fatty tissue of the male breast without a change in the amount of glandular tissue.

Gynecomastia is also seen in a number of different clinical syndromes and disease processes. The most common clinical syndrome is Klinefelter’s syndrome, followed by Gilbert’s Disease, and then Conn’s syndrome. Hormone producing tumors of the testes, adrenal glands, lungs, or liver can also produce gynecomastia. The most common tumor that is associated with this problem is the Leydig cell tumor of the testicles. Disease processes that can lead to the development of gynecomastia include: liver disease (especially cirrhosis), lung disease, kidney failure, AIDS and HIV infections, and hyperthyroidism. In fact, gynecomastia can be the first sign of hyperthyroidism.

There are also many drugs that are associated with this problem. They include: flutamide, which is used in the treatment of prostate cancer; antibiotics such as ketoconazole and metronidazole; anti-ulcer medications such as cimetidine, ranitidine, and omeprazole; anti-cancer drugs such as methotrexate, bencalkaloids, nitroureas, and busulfan; cardiovascular drugs such as digitalis, digoxin, verapamil, spironolactone, and captopril; along with the use anabolic steroids, exogenous hormones, and marijuana. There are many more medications that are associated with gynecomastia but are too numerous to mention here.

The initial evaluation of gynecomastia includes a detailed history and physical exam and when appropriate, a mammogram and ultrasound. The history should include the time of onset in age, family history, duration of enlargement, history of systemic illnesses, weight change, and drug or medication usage. The physical exam should include height, weight, blood pressure, Tanner staging, testicular exam, and a neurological exam. It is important to differentiate between physiologic gynecomastia that is due to either a pathologic process or to the use of a specific drug. In men with gynecomastia, the enlarged breast tissue is soft and rubbery, concentrically shaped around the nipple, is tender and may be unilateral or bilateral. Male breast cancers, however, present as a firm, irregular mass that is not centrally located or as a firm nodule within a larger softer breast. Male breast cancers are commonly fixed to the skin or underlying musculature and may be associated with ulcerations, bloody nipple discharge, and/or axillary lymphadenopathy. Clinically, the sensitivity and specificity of both mammography and ultrasonography is quite good and can be helpful.
in differentiating cancer from gynecomastia. Mammography has a sensitivity of 92% and a specificity of 90% with a negative predictive value of 99%. Finally, ultrasound guided core needle biopsy is well tolerated in men and very accurate in differentiating these two clinical entities.

The degree of Gynecomastia has been classified based on two systems, one by Simmons and one by Rohrich. In Simmon’s classification, Class I is minor breast enlargement without skin redundancy. Class IIA is moderate breast enlargement without skin redundancy while IIB is moderate breast enlargement with minor skin redundancy. Class III is gross breast enlargement with skin redundancy that simulates the pendulous female breast. In Rohrich’s classification, Class I is described as minimal breast hypertrophy without ptosis. Class II is moderate breast hypertrophy without ptosis. Class III is severe breast hypertrophy with grade 1 ptosis, and Class IV is severe breast hypertrophy with grade II or III ptosis. All four Classes are then characterized as either A (glandular) or B (fibrotic).

The treatment of gynecomastia is based on the underlying cause in each particular patient. Treatment is directed towards correcting the underlying disease process or by stopping the offending agent if feasible. Fortunately, most patients will only need reassurance and observation. For those men who do not respond to conservative measures, occasionally one will have to resort to medical, radiation oncology, or surgical interventions in order to correct the abnormalities.

Medical therapy has been shown to be helpful in the treatment of gynecomastia. Medications that have been shown to be effective include: Danazol, Tamoxifen, Dihydrotestosterone, Anastrozole, and Evista. In two different studies comparing Tamoxifen to Danazol, Tamoxifen had an 82% rate of complete resolution whereas Danazol only showed a 40% complete response rate. In patients, particularly prostate cancer patients on anti-androgen therapy, a dose of 12 to 15 gray of external beam radiation delivered to the breast has been shown to have good results in reducing the degree of gynecomastia.

The treatment of pubertal gynecomastia is based on the underlying cause and the degree of breast enlargement and redundancy. For mild grade I and II, reassurance and observation is all that is needed as nearly 90% will resolve on their own within several years. For severe grade III pubertal gynecomastia, the patient needs to be referred to a pediatric endocrinologist for an endocrine work-up and potential hormonal therapy. If there is no improvement by age 17 or 18, good sound oncoplastic surgical techniques have been developed that will result in a very nice cosmetic outcome, usually through a reduction mammoplasty type procedure.

Breast enlargement in older men needs to be evaluated and at least followed. Even if clinically benign, a mammogram and ultrasound should be performed to document it radiographically. If it is related to a particular drug therapy, one can always either stop the medication or switch to another in order to continue to treat the intended medical problem. If it continues for three months you can either continue observation, especially if asymptomatic, or if it continues to enlarge or cause pain and discomfort, one can always consider a short course of Tamoxifen of 10 mg per day or proceed with surgical correction through oncoplastic surgical techniques. For clinically suspicious gynecomastia in older men, biopsy with a core needle device is important in order to rule out breast cancer. Remember that men also can get breast cancer and over 1,800 men will be diagnosed this year with this disease. Although men are treated the same, stage for stage, as women, they generally present at a later and more advanced stage, resulting in lower survival numbers.

In summary, Gynecomastia presents during three different time periods in a male’s life. This is due to physiological or exogenous causes. Understanding the underlying cause is important in the diagnosis and treatment. Fortunately most men do not need surgical or medical intervention, but for those who do there are different options available depending on the underlying cause.

Turn to the professionals that women know and trust.

N. Craig Brackett, III, MD, FACS
Angela M. Mislowsky, MD

Coastal Carolina BREAST CENTER
(843) 651-3308
CoastalBreastCenter.com
Offices in Murrells Inlet and Georgetown, SC