Poland's syndrome is an hereditary, congenital abnormality involving problems in the development of the breast, chest wall, and hand. There is variable expression of this condition, ranging from mild breast hypoplasia and pectoral maldevelopment, to complete amastia, absence of multiple muscles and ribs, and ipsilateral brachysyndactyly.

Although synergistic muscle hypertrophy generally prevents chest and shoulder girdle dysfunction, the aesthetic consequences of chest maldevelopment can produce significant problems for affected patients of both sexes.

The Foundation
for
Reconstructive Plastic
Surgery

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Information of Interest on...

Poland's Syndrome

THE FOUNDATION FOR RECONSTRUCTIVE PLASTIC SURGERY

Although Poland's Syndrome shows significant variation in expression, hypoplasia of the breast and pectoralis major muscle are its sine qua non. The patient's chest contour is much like that seen after radical mastectomy, the ribs being prominent, and the normal anterior axillary fold absent (below, left). In females, underdevelopment or absence of the breast is of particular importance, but absence of the nipple (athelia) may be seen in patient's of either sex.

17 yearold female with breast and nipple/ areolar hypoplasia, and absence of the sternal head of pectoralis major.

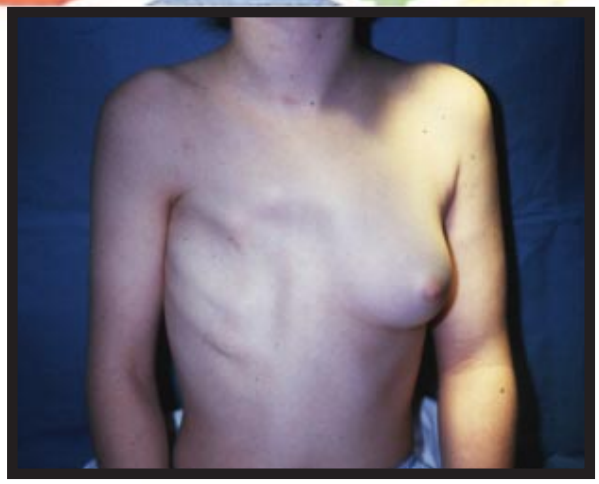
Patient 10 months after surgery employing latissimus dorsi muscle transfer from back and breast implant after skin expansion.

Unless led to seek surgery at an early age because of associated hand dysfunction, most patients will present to the doctor in the teen years. During this emotionally trying time, problems of self-image are encountered in patients of both sexes. However, difficulties relating to sexuality are, for obvious reasons, particularly marked in young women. For them, dilemmas exist even apart from intimate situations, as contralateral breast development yields chest asymmetry which is ever-greater and more difficult to conceal (above).

Treatment may involve the use of implantable artificial devices to simulate normal muscle contour and/or the use of patient tissues transferred to the chest from a distance. The goals are somewhat less complex for men, since their's is usually a pure chest wall contour problem. One may fabricate a custom implant made from models based upon impressions of the chest wall, and place this beneath the anterior chest skin. However, more physiologic and credible reconstruction can be accomplished by muscle transfer to replace the missing pectoral. The most common donor is the ipsilateral latissimus dorsi which can be transferred as an innervated unit, leaving only a subtle contour change in the donor area of the back (left panel).

For young women, restoration of both chest contour and the breast is of critical importance. Most often, chest wall restoration is accomplished with muscle transfer performed in the mid-teen years. For many, this is achieved with a latissimus dorsi flap, as originally championed by Hester, Bostwick, and others. For those whose congenital syndrome includes absence of the latissimus, the teres major flap described by Godfrey will often provide the best solution, (right, below). Placement of a tissue expander at the time of muscle transfer will allow the surgeon to periodically inflate the prosthesis and mimic contralateral breast development. This will be continued until the opposite breast completes its growth, at which time the expander can be replaced with a permanent prosthesis.

Another option for the young woman is a totally autologous reconstruction. With this method, the expander is not replaced by an implant, but with a large block of tissue from the lower abdomen or buttock. Such transfers are complex, microvascular procedures which leave permanent scar in the donor area. However, they will produce a soft, natural breast reconstruction which can be expected to serve the patient well for her entire life without need of further surgical intervention.



15 year girl with severe Poland's Syndrome showing total breast and pectoral muscle absence as well as rib anomalies

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Patient one year later after muscle reconstruction with teres major flap and breast reconstruction with saline implant and nipple creation