



Plastic Surgery

A STUDY ON RESULTS OF IMPLANT BASED BREAST AUGMENTATION IN POLAND SYNDROME IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Background: Poland's syndrome, a rare congenital anomaly, consists of unilateral absence of the pectoralis major muscle, ipsilateral brachysyndactyly, and occasionally associated with other deformities of the anterior chest wall, nipple areaola complex and mammary glands. In severely underdeveloped breasts, the significant amount of soft tissue needed for reconstruction continues to be a surgical challenge. Our study aims to present 10 cases of silicone based breast augmentation for aesthetic restoration of the Poland syndrome chest deformity that achieves breast symmetry while maintaining a scarless appearance. **Study design:** Prospective, interventional, institution based, conducted at Apollo Multispeciality Hospitals, Kolkata, India. **Method:** Our study includes 10 patients operated over a period of 2 years; all patients underwent silicone implant based breast augmentation through inframammary approach and were followed up for 1 year, without any significant complications. **Conclusion:** The surgical method with silicone based implant augmentation is a sufficient technique for breast reconstruction provided chest wall deformities are ruled out and gives a good long-term result in case of Poland's syndrome.

KEYWORDS : Poland syndrome, augmentation, Silicone implant, inframammary approach.

INTRODUCTION

Poland's syndrome was initially reported by British surgeon, Sir Alfred Poland in 1841, characterised by the congenital absence of pectoralis muscle and ipsilateral skeletal anomalies [1]. Other authors described the syndrome by congenital aplasia or hypoplasia of the sternocostal head of the pectoralis major muscle, associated with ipsilateral malformation of the breast, nipple, and the upper limb. The incidence has been estimated between 1:30,000 and 1:80,000 of live births, with a gender predominance in men at a ratio of 3:1 [2]. The literature describes abnormalities associated with the syndrome, including aplasia or hypoplasia of the rib cage, vertebral defects, and dextrocardia as common findings.[3] The exact cause of Poland's syndrome is unknown. However, interruption of the early embryonic blood supply in the subclavian arteries, the vertebral arteries, and/or other branches has been hypothesized. Most reported cases are sporadic, but the disease may be inherited as an autosomal-dominant trait. The responsible gene has not yet been mapped [4]. While the etiology remains unclear even today and familial inheritance is rare, interruption of the embryonic blood supply, as well as sporadic mutation and consequent bud line cell death, have been postulated as possible culprits [5,6]. The described treatment options are - pedicled latissimus dorsi flap, free flaps such as the deep inferior epigastric artery perforator (DIEP), anterolateral thigh (ALT), transverse myocutaneous gracilis (TMG) or transverse rectus abdominis myocutaneous (TRAM) flap. Other options are autologous free fat transfer and fat grafting or augmentation with synthetic materials such as individualized breast implants. Unfortunately, each procedure has its risks and limitations which have to be well balanced, and a very individualized treatment concept is key in most cases. Since Poland syndrome presents itself in a variety of degrees, each technique has its benefits and drawbacks. Compensating the missing volume of the chest wall and/or breast with an implant is one of the most frequently used techniques for treating patients with Poland syndrome. While the results of customized implants are often aesthetically pleasing, the long-term effects of the foreign bodies and their inability to adapt to changes of the patient's body proved to be a disadvantage. Displacement and seroma are the most commonly occurring complications, and while early-stage seroma rates of up to 30% are found in the literature, there is little reported data on late onset chronic seroma [7,8]. In men, a customized silicone or other polymeric implant is often regarded a popular and sufficient treatment, resulting in a camouflaging of the chest wall defect and a negligible scar at the incision site.

METHODOLOGY

This prospective, interventional, institution based study was conducted at Apollo Multispeciality Hospitals, Kolkata, and included 10 patients in the age group of 20-40 years operated over a period of 2 years - during January 2020-December 2021 and were followed up for 1 year without any serious complications. The incision was marked preoperatively for optimal positioning of the implant. Augmentation was performed under general anesthesia through inframammary incision, and a round, textured silicone implant was placed in a well dissected pocket. All the patients were recorded for early and late

surgical complications and satisfaction. Only 2 patients had early seroma which resolved with conservative treatment with antibiotics and dressings.

RESULTS

All patients were discharged the next day. No major complications were noted in any of the patients during the one year follow up period and all patients were satisfied with the final appearance.

TABLE 1 – General Details

SERIAL NO	AGE IN YEARS	SIZE OF IMPLANT	PATIENT SATISFACTION	COMPLICATIONS
1	22	220 cc	GOOD	NIL
2	25	280 cc	VERY GOOD	NIL
3	28	240 cc	VERY GOOD	NIL
4	32	220 cc	FAIR	SEROMA
5	35	325 cc	VERY GOOD	NIL
6	23	280 cc	GOOD	SEROMA
7	26	240 cc	FAIR	NIL
8	31	280 cc	VERY GOOD	NIL
9	37	235 cc	VERY GOOD	NIL
10	29	315 cc	VERY GOOD	NIL

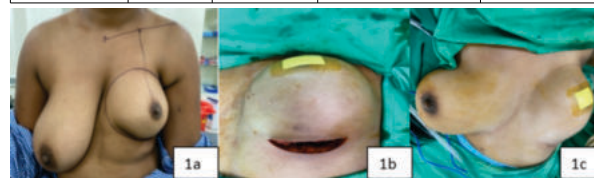


Figure 1a – pre operative markings, 1b – after placement of implant, 1c – immediate post operative.



Figure 2a - pre operative markings, 2b -220 cc round, textured implant, 2c- after implant placement.

CONCLUSION

Implant based augmentation is a reliable alternative for aesthetic improvement of deficient breast tissue in Poland syndrome. Proper patient selection and thorough assessment are prerequisites to successful outcome of the surgery.

Insertion of silicone implants is seen as a safe procedure to compensate breast asymmetry in cases with none to mild chest deformity, but patients have to be informed about the possible risk and long-term implications, such as capsular contracture and the lifelong need for potential implant exchange.

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