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Is Breast Reduction Plasty in an Eleven-Year Old Girl Indicated? – Case Report

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Summary

The history and the problems of surgical therapy of an eleven-year old girl with infantile hypertrophy of both breasts is described. It is only by good cooperation between paediatricians and plastic surgeons that the indication for operation can be evaluated. Careful weighing of the "pros" and "cons" will help in making this decision.

Key words

Infantile breast hyperplasia – Reduction plasty

Résumé

Les auteurs rapportent l'observation d'une jeune fille de 11 ans qui a posé le problème du traitement opératoire d'une hyperplasie mammaire. L'indication opératoire peut seulement résulter d'une bonne collaboration entre pédiatres et chirurgiens plastiques. La connaissance des inconvénients et des contre-indications de même que les avantages de la réduction mammaire peut faciliter le choix chez ces patients.

Mots-clés

Hypertrophie des seins chez une enfant – Réduction plastique

Zusammenfassung

Anhand der Krankengeschichte eines 11jährigen Mädchens wird die Problematik der operativen Therapie einer jugendlichen Mammahyperplasie beschrieben.

Die Indikation zur Operation kann nur durch gute Zusammenarbeit zwischen Kinderärzten und Plastischen Chirurgen gestellt werden. Das Wissen um Nachteile und Kontraindikationen, sowie die empathisch-einfühlende Führung dieser Patienten erleichtert die Entscheidung.

Schlüsselwörter

Infantile Hypertrophie der Brüste – Reduktionsplastik

Case report

An eleven-year old girl observed a marked increase in the growth of both her breasts since she was 10. The patient did not have any difficulties until menarche at age 10 1/2 when she experienced tension and pain in both breasts as well as complaints of burning and pulling in her pectoral girdle. Her breasts' circumference increased periodically and was especially pronounced and painful before menstruation. In addition, the patient complained of increased back pain when sitting for prolonged periods of time in school. An increase in tiredness was also noticed. Because of the immense weight of her breasts, the patient was excused from school sport activities. Socially, the child was completely integrated into family and school life, yet suffered greatly under her physical appearance and in turn responded depressed. Because of her growing misery and diminished quality of life, the child's mother decided to take the girl to a physician.

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Case history

The patient was the third child in the family. She was born 5 weeks premature with a birthweight of 2700 g/47 cm. The mother of the child was 37 years old at time of birth. Her first birth was 18, the other 15 years ago. In the interim she took oral contraceptives for eight years.

At 4 months of age the patient had pneumonia and at 10 months bronchitis. Antibiotics were used as treatment. As an infant the patient had recurring febrile seizures which disappeared in later years. Both the sister and the mother of the patient had breasts of normal size and shape.

There was no evidence of other concurrent drug or medication use.

Examination

At age 11 1/2 the girl weighed 46 kg (95 percentile, projected normal 45.2 ± 7) and was 156 cm tall (97 percentile, projected normal 142 ± 6). Pubescent development was stage 5 according to Tanner scales. Age estimates by radiologic examination of the hand indicated her to be 13.5 years old. On general physical examination there were no abnormal findings except for an accidental systolic murmur. Ultrasound of the lesser pelvis revealed a fully developed uterus of 7.5 cm when stretched in length. Both ovaries of normal size showed several cystic areas which corresponded to small follicular cysts.

Routine blood chemistries as well as the blood count of the patient were normal. Hormonal analyses were within normal limits. The following hormones, involved in the development of the breasts, were measured: thyroid function tests including TRH-Test, prolactin basal and with TRH stimulation, LH and FSH basal and LHRH-test, estrogen, progesterone, DHEAS, 17-OHP basal and with stimulation of ACTH. The CT scan of the head to evaluate the sella and to exclude any possibilities of a hypophyseal tumor was unremarkable. On lateral view radiographs showed a considerable kyphosis of the vertebral column which could have been caused only by the heaviness of the breasts. The mammography showed a diffuse thickening of the breast parenchyma; however, no isolated nodules were found. There seemed to be no evidence of malignancy.

Local status

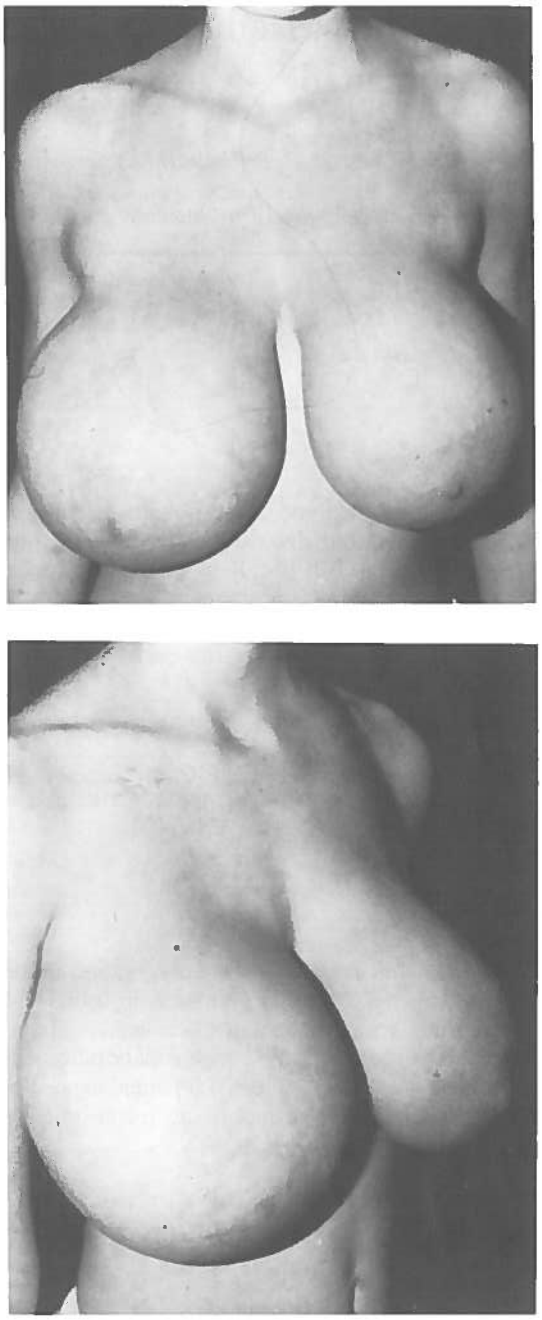
Both breasts were greatly enlarged. The right breast reached almost to the umbilicus and was distinctly larger than the left (Fig. 1a and b). Its horizontal diameter was 33 cm, whereas that of the left breast was 30 cm. The vertical diameter was 28 cm on the right side and 25 cm on the left. While standing the midclavicular distance between the nipples was 32 cm on the right and 29 cm on the left. The diameter of the areola was 8 cm on the right and 7 cm on the left. The skin over it was very taut and slightly red with many prominent superficial veins. Medially, pronounced striae were visible. No galactorrhoea. No tumor was found by palpation. There was no lymph adenopathy of axillary and supraclavicular lymph nodes.

Operation

The breast reduction plasty was performed after a thorough preoperative consultation and marking of the new nipple distance at 19 cm (Fig. 2a). 1300 g of glandular tissue was removed on the right side and 1180 g on the left. Macroscopically the tissue contained mainly glandular parenchyma with hardly any fat.

The postoperative recovery occurred without complications. Only two months after the operation there was swelling and tenderness tension in the right reduced breast before menstruation.

Histological analyses revealed a breast parenchyma with little fat infiltration. Embedded were numerous lactiferous ductules with verruciform proliferate epithelia without atypia. Only in a few places the periductal stroma was myxoid. There were no nodules. The immunohistochemical stain for the progesterone receptor (PGRICA) was positive. The stroma was negative. The breast tissue was estrogen, progesterone, and androgen receptor positive. Histologic diagnosis: infantile breast hyperplasia.*



a

b

Fig. 1 a and b 11-year old girl: Both breasts were greatly enlarged. The right breast reached almost to the umbilicus and was distinctly larger than the left.

Discussion

Literature study reveals only a few cases in which girls required a breast reduction plasty at age eleven. *Mayl* (8) described in 1954 an eleven-year old girl who initially underwent a reduction plasty but because of recidivation at twelve years of age had to undergo a complete mastectomy. Full particulars, pre-operative work-up and indications for operations were absent in this report. In 1971, *Fisher* and *Smith* (5) described a ten-year old girl who had to be operated on because of a "virginal" hypertrophy of the breast. In this case too a post-

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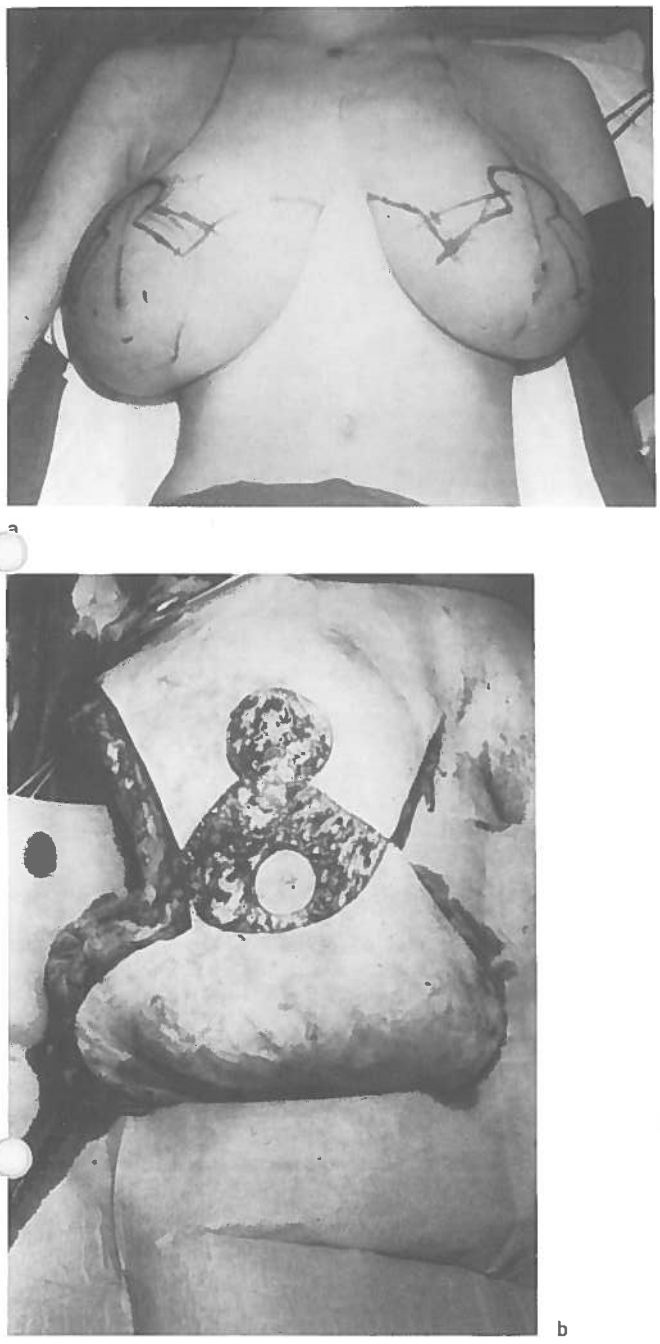

Fig. 2 a and b a) Intraoperative situs with marking of the position of the mamillae. b) Breast reduction plasty (right).

operative recurrence occurred as well. There was indication for operation because the child's school activities and social relations were very restricted. A preoperative hormonal therapy was not successful. In 1977 *Cardoso de Castro* (2) published a case of a 12-year old girl who underwent a breast reduction. Here, too, recidivation occurred and a subsequent subdermal mastectomy was unavoidable. Indication for operation was due to psychosocial and esthetic considerations. Preoperative hormone analyses and a pelvioperitoneography were normal. In 1983 *Bostwick* (1) mentioned an eleven-year old girl he had operated. A detailed case description was not published.

The main question which arose in the case of the girl we operated on was whether a breast reduction plasty is indicated and may be performed among this age group. Initially a hypophyseal tumor or rather a malignant breast tumor, had to be excluded. A second problem was the psychological effect not only on the child but also the family. Usually in these cases, shyness and embarrassment involved lead to medical care being sought at a late date. The physician must therefore exhibit great empathy. He must be able to discuss the problem with the child and the family and encourage patience that he needs in order to monitor the child's breast growth for several months (3).

The decision whether to operate or not, ultimately depends on the degree of suffering and the individual symptoms of the patient. Frequent complaints that give reason to operate are: heaviness of breasts, grooves and scars on the shoulders from the pressure of brassiere straps, shoulder pain, back pain and deformities which may even *cause kyphosis, breast tension, orthopnoea,* restriction of mobility, myogeloses, intertrigo, eczema, dermatoses, tiredness, and headaches which often are augmented premenstrually (12). These signs and symptoms must be taken especially seriously with growing children. In addition to somatic complaints, psychosocial problems are also decisive. Cases accompanied by enormous suffering and unbearable psychological strains have been described by different authors. Such descriptions include, among others, contactlessness, feelings of inferiority and insecurity, and neurotic tendencies. If the symptoms are thus advanced then the operation cannot be avoided even with the knowledge that some of these symptoms may recur. Recurring symptoms occur in many cases as the literature describes. A statement of statistical significance cannot however be made because of the small number of cases (11).

Attempted preventions of recidivation through medications are often tried and mentioned in the literature. The administration of dihydrogesterone and tamoxifencitrate has yielded some success (10).

In less acute cases one should not operate until the breast is completely developed. The initial examination should involve a mammography. Carcinomas are rarely found among this age group. The cystosarcoma phylloides is found comparably more often, however can only be verified histologically. In cases where there is a rapid increase in breast size and possibly asymmetrical growth, mammary tumors other than the cystosarcoma phylloides may exist. These tumors could necessitate a more rapid therapy and are the following: fibroadenoma, fibroma, intraductal papilloma, mastopathy, cysts, cystic mastitis, lymphoma, lymphosarcoma, angiosarcoma, and possibly tbc. and sarcoidosis (9). Evidence of bilateral fibroadenomas is found in the literature (8). However, it is often not clear whether these cases do not involve a juvenile hypertrophy instead. An evaluation of these cases is not possible since here too accurate case studies are absent.

It is currently being discussed whether hormonal imbalances as well as a hypersensitivity of estrogen receptors to estrogen may be a cause of infantile hypertrophy of the breasts (7, 10). A frequent argument against an extensive reduction plasty is that such a procedure would inhibit proper functioning of the breasts during lactation.

It must be mentioned, however, that hypertrophic breasts rarely function normally during lactation.

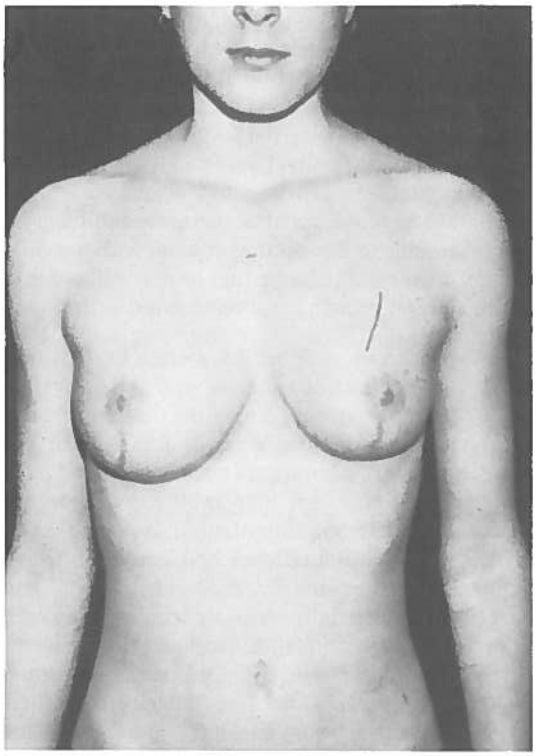

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Fig. 3 a and b Result one year after surgery.

Before performing a breast reduction plasty, causes such as hormonal imbalances, hypophyseal tumors, as well as the intake of medications and drugs must be excluded (4, 6). One should operate during the two middle weeks of the menstrual cycle. Because of the positive outcome with our patient (Fig. 3a and b) we can conclude one year after the operation that a breast reduction plasty may be performed upon an eleven-year old girl with confidence if so indicated and as long as one is aware of the complex problems involved. In this case, postoperative somatic and psychological changes progressed very positively.

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