Vol. 16, No. 3
ORIGINAL PAPER

PLASTIC & RECONSTRUCTIVE SURGERY

MEDICAL CHANNEL
JULY - SEPTEMBER 2010

SURGICAL CORRECTION OF NIPPLE INVERSION; OUR EXPERIENCE

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ABSTRACT:

OBJECTIVE: *To evaluate and present our experience of surgical correction of nipple inversion.*
PATIENTS & METHODS: *During the study period of from March 2006 to December 2009, 13 female patients, with diagnosis of nipple inversion directly reported at OPD and admitted to Department of plastic & Burn Surgery; Liaquat University of Medical & health Sciences, Jamshoro. 02 patients were referred from other hospital of the province, admitted through our outpatient department. A well informed consent was taken before inclusion of the patients in the study. The counseling consists of the fact that patients with grade one or grade two are most likely to retain the ability to breastfeed in contrast to the grade three inversions. Data was stored and calculated by SPSS 17.*
RESULTS: *The Mean±SD age of patients in this series was 26±4.3 years. In all patients single breast was affected. In 9 patients inversion of nipple found on right breast while in 4 patients presented with inversion of nipple of left breast. When examined 2 patients were having grade 1 inversion, 8 patients grade 2 and 3 patients were having grade 3 inversion of nipple. On mean follow up period of 18 months, 8 women (61.55%) were able to feed their newborn successfully. The nipple projection was maintained in 11 patients, while mild dropping of nipple seen in only 2 patients. However during the entire period of follow up, no recurrence found in any case.*
CONCLUSION: *The inverted nipple still represents a challenge for plastic surgeons. We found that with simple technique, the scar is inconspicuous, functional element remain intact. In the case of a failure, it can be redone easily without major scarring.*

KEYWORDS: nipple inversion, nipple reconstruction, cosmetic surgery

INTRODUCTION:

A condition when nipple is at a plane lower than the areola is called as inversion of nipple and it affects 2-3% of all women.[1] The nipple inversion is mostly congenital; however it may be acquired after childbirth when underlying cause is scarring of milk ducts.[2,3]

First reported correction surgery for inversion of nipple was performed by Kehrer in 1879 [4]. There are various classification however mostly the classification proposed by Han and Hong is followed to document the severity of nipple inversion [5].

When there is minimum fibrous tissue underneath, with manual manipulation nipple can easily pulled out and maintain projection and therefore lactation is possible, and then it is labeled as grade 1 nipple inversion. It may be corrected by a simple buried purse string suture. When after some difficulty nipples can be pulled out but cannot maintain projection and rapidly retract into the breast indicates moderate fibrous tissue and condition is grade 2 nipple inversion. Surgical management involves dissection of the nipple to release fibrous tissue bands. As lactiferous ducts are preserved, the lactation is not impaired [6].When there is severe fibrosis then it is impossible to evert the nipple by manual manipulation and it signifies grade 3 nipple inversion. The severe fibrosis at the base of the nipple make it impossible to separate all fibrous tissue bands without damaging the lactiferous ducts and therefore lactation is affected significantly. Over period of time re-canalization of the ducts can improve lactation.

All our cases of nipple inversion were operated under local anesthesia with supplemented intravenous sedation. With gentle traction nipple averted and maintained in averted position using skin hook. Then a periareolar incision is made at the base of nipple. The careful dissection is performed in the subcutaneous tissue and all lactiferous ducts identified.

TABLE NO 1
GRADING OF NIPPLE INVERSION

	Grade 1	Grade 2	Grade 3	Right Side	Left Side
From OPD	1	7	3	7	1
From Other Hosp	1	1	0	2	3
TOTAL	2	8	3	9	4

TABLE NO II
OUTCOME

	Number of patients	Percentage (%)
Successful Feeding	8	61.55
Corrected nipple projection	11	84.61
Dropping of nipple	2	15.38

The each lactiferous duct is then separated from the fibrous tissues using blunt dissection performed from base of nipple down into the breast tissues. Once all lactiferous ducts are well separated from the fibrous tissue, then only the nipple projection can be appreciated. To obtain reasonable degree of projection, on occasion we scarify selective lactiferous ducts under direct visualization till complete eversion with normal projection achieved. To maintain this projection and reduce dead space, we insert two internal sutures, at right angle to each other, one vertically downward from 12 o clocks to 6 o clocks and second horizontally from 9 o clocks to 3 o clock positions. These sutures when tied draw opposite walls of the nipple together and this add stability to projection achieved by blunt dissection. Then an external purse string suture is run at the junction of nipple and areola. We use vicryl 4/0 for these sutures. To maintain eversion and projection of nipple that achieved prolene 1 suture is passed through the centre of the nipple and with gentle anterior force, its end are tied over the inverted small flask placed over the nipple areola complex. This exerts traction over the newly everted nipple. This traction is maintained for 5-7 days. The dressing of the operative site is done with gauze cut to make hole for nipple and Fixomull® adhesive dressing applied.

Several different techniques [7-17] so far developed can broadly be classify into 8 different procedures. The first and most quoted group of procedures involves releasing the bridles that retain the nipple, either as a procedure by itself or in association with other procedures.[8,9] The second group involves reduction of the nipple base with different techniques: purse-string suture, temporary external purse-string suture, resection of the areola, resection of the areola and purse-string suture, and star flaps.[10-14] The third group involves creating submamillary support in different ways including tunneled decorticated flaps, tendinous strips, transient contention threads, and removable piercing. The fourth group consists of external traction, and the fifth group involves concentrating the parenchyma at the nipple base (bulk). Finally, the less frequent procedures are subcutaneous myotomies, augmentation of the nipple base, and the transmamillary procedures are at present in use for improvement of inverted nipples.[15] The variety of techniques point towards the lack of a high-quality, sustainable, and long-lasting solution for this quite frequent problem.[16,17]

In our local setup where breast feeding has yet not become obsolete the functional issue is as important as the aesthetic issue and therefore the least invasive procedure yielding consistent results with minimum recurrence rate would be preferable. From this aspect, we would like to present our results for correction of inverted nipples.

PATIENTS & METHODS:

During the study period of from March 2006 to December 2009, 11 female patients, with diagnosis of Nipple inversion directly reported at OPD and admitted to Department of plastic & Burn Surgery; Liaquat University of Medical & health Sciences, Jamshoro. 02 patients were referred from other hospital of the province, admitted through our out patient department. They had no history of previous surgery for this condition. Before being enrolled for the study, they were counseled and then informed consent obtained. The counseling consists of the fact that patients with grade one or grade two are most likely to retain the ability to breastfeed in contrast to the grade three inversions. However patients with grade three couldn't breastfeed before the corrective surgery either. Postoperatively these were followed for cosmetic/ functional results on regular basis. A predesigned proforma was used to record the study variables, data analysis was done through SPSS 17.

RESULTS:

The Mean±SD age of patients in this series was 26±4.3 years. Thirteen patients were married and had at least one baby. The main concern of these patients was functional disability, as they have faced difficulty to feed their babies. On the other hand aesthetic appearance was the main concern for only 2 patients. In all patients single breast was affected. In 9 patients inversion of nipple found on right breast while in 4 patients presented with inversion of nipple of left breast. When examined 2 patients were having grade 1 inversion, 8 patients grade 2 and 3 patients were having grade 3 inversion of nipple as shown in table No 1.

The mean operating time was 45 minutes. The 1st dressing changed on 3rd postoperative day and then on alternate day basis for 3 dressing. The traction sutures removed on 5th post operative day.

The aesthetic and functional satisfaction of patient noted on follow up, we found excellent results.

On mean follow up period of 18 months, 8 women (61.55%) were able to feed their newborn successfully. The nipple projection was maintained in 11 (84.61%) patients, while mild dropping of nipple seen in only 2 (15.38%) patients. However during the entire period of follow up, no recurrence found in any case - Table II.

DISCUSSION:

The inverted nipple is not uncommon and prevalence as high as 3% has been reported [19]. However, correction of the problem is not always simple particularly when functional potential is to be preserved as well. The condition has been linked not only to aesthetic, functional, and

psychological problems but may be associated with congenital syndromes such as Robinow syndrome or MR/MCA syndrome [20, 21] although clear genetic traits have not yet been identified[22].

The latest inverted nipple classification, as suggested by Han and Hong [5], is based on the amount of effort needed to pull out the nipple manually, that in turn depends upon the amount of fibrosis existing radially to the nipple. Hence, amount of fibrosis increases from grade 1 through grade 3. The majority of inverted nipples belong to the grade 2 classification believed to have moderate fibrosis beneath them. With careful blunt dissections during surgical procedure, recurrence can be prevented. When lactiferous ducts are to be preserved, these must always be identified, this also allows proper release of fibrotic bands in grade 2 group. The purse-string suture produce circular shape of the scar around the nipple, scar contracture will therefore actually increase rather than decrease nipple projection.

For the grade 3 group, severe fibrosis makes it almost impossible to obtain optimal release of the fibrotic band with preservation of the ducts and procedure therefore demands highly skilled expertise. Fortunately grade 3 is relatively uncommon.

It has been shown that[23] failure rate of surgery for inverted nipple of breast is identical whether the lactiferous ducts are divided or not. We therefore suggest that the surgical approach should always be to take every effort to preserve the ducts. The result of an American cohort [24] study revealed that women with inverted nipples were found to have statistically significant insufficiency in lactation, when compared with those who had normal nipple. Therefore the significance of the correction of inverted nipple to enable these women to feed their infants is self explanatory.

We performed this technique on 13 patients. The average age of patients was 26 years. The average follow-up period was 18 months, whereas the longest follow-up period was 30 months. We did not observe any immediate postoperative complications. One patient in this series after correction of grade 3 inverted nipple, was unable to breast feed her baby probably due the extensive damage to the lactiferous ducts. The same patient reported a significant decrease, but not a total loss, of nipple sensation. All patients expressed satisfaction with the overall aesthetic and functional results.

CONCLUSION:

The inverted nipple still represents a challenge for plastic surgeons. We found that with the simple technique, the scar is inconspicuous, functional element remain intact. In the case of a failure, it can be redone easily without major scarring.

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