Evaluation and surgical outcome of inverted nipple at Kathmandu Medical College Teaching Hospital

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ABSTRACT

Introduction: Inverted nipples are related to multifactorial aspects, relating with aesthetic, biological, and psychological to the patient. The treatment depends on the patient's symptoms and aesthetic complaints caused by the inverted nipple. The objective of this study was to evaluate the grading of inverted nipple and the surgical outcome by using Sakai method for its correction. **Methods:** It is a hospital based descriptive study conducted to assess age, sex, site, shape, grading. The history of peri-areolar abscess, recurrence and treatment outcome by Sakai method for its correction. **Results:** A total of 20 patients were included with 26 cases of inverted nipple in which six cases of bilateral, nine cases of left sided and five cases of right sided. The mean age was 30±8.399 years ranging from 18 to 52 years. Most of them were females 19(95%). We found grade II inverted nipple on 16(80%) of patients and grade III inverted nipple on 4(20%). Most of them were round shape 16(50%), rest were rectangular 4(20%), slanting 3(15%), omega 2(10%) and one with cup shape nipple. Patients were followed up for three months for observation. **Conclusions:** The common type of inverted nipple was Grade II followed by Grade III and the defects were successfully corrected using Sakai method.

Keywords: Aesthetic outcome, inverted nipple, Sakai method.

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INTRODUCTION

An inverted nipple is defined as the nipple, which is retracted inwards, as compared to pointing outwards, as is seen in normal anatomy. Usually presented as a congenital origin and presented in both males and females. Patients with inverted nipples are physically and mentally disturbed because of the appearance of their breasts.

The first surgical correction of the inverted nipple was done by Kehrer in 1879[1] and a variety of invasive and non-invasive treatment methods has been described till date, but the author chose Sakai[2] method for its correction due to its reliability and appropriate for grade II and III inverted nipple according to Han and Hong classifications.[3]

The objective of the study was to assess grading of inverted nipples and assess the aesthetic outcome for its correction by using Sakai method.[2]

METHODS

This was a hospital based descriptive study conducted from 1st March 2021 to 28th February 2022 at Kathmandu Medical College, Sinamangal, Kathmandu. Unilateral or bilateral grade II and III inverted nipples were included in the study while the exclusion criteria were inverted nipples with lactating women and patients with history of breast carcinoma. The entire inverted nipple was corrected with Sakai method.[1] The incision line was made on the sulcus of the inverted nipple in the major axis direction. From the incision slowly, steadily, and firmly, the fibrous band and central

lactiferous ducts were dissected, released, and stretched vertically. The nipple was then split into 2 flaps. Both flaps were inner sutured between the inside base of the nipple flaps, without entangling the lactiferous ducts. At both ends of the incision line, z-plasty was added to the base of the nipple. The skin suture was only performed at the apex of the nipple and the bottom base of the nipple; raw surface remains on both sides of the nipple to create a ball-shaped nipple.

The age, sex, site, shape, grading of inverted nipple, history of recurrence, mastitis, breast abscess, partial nipple necrosis, and delay wound healing data were collected and assessed. Patients were followed up for three months after the surgery to observe the outcome in terms of recovery and development of complications. Ethical approval was taken from the Institutional Review Committee (Ref no. 0502212102) before conducting the study. Patients were informed of the procedure in detail and their enrollment into the study and their informed written consent was taken. Frequency analysis was done for the entire cases recorded using Statistical Package for the Social Sciences software version 20, Chicago, IL, USA.

RESULTS

A total of 20 patients were included with 26 cases of inverted nipples in which six cases were of bilateral, nine cases of left sided and five cases of right sided. (Figure 1) The mean age was 30± 8.4 years and it ranged from 18 to 52 years. Most of them 19(95%) were females.

The study revealed grade II inverted nipple on 16(80%) patients and grade III on 4(20%) patients. Most of them were round shape 16(80%), rest were rectangular in 4(15%), slanting in 3(12%), omega in 2(8%) and 1(4%) had cup shaped nipple. Among the pre-operative complications observed, mastitis occurred in 13(65%) cases, peri-areolar abscess in 13(65%), and post-operative partial necrosis was seen in 1(5%) patient and 1(5%) patient developed recurrence, who was managed by re-do surgery with the same Sakai method and the results were satisfactory in follow-up visit. The morphology of the nipples and their outcomes are presented in figure 3 to 5.

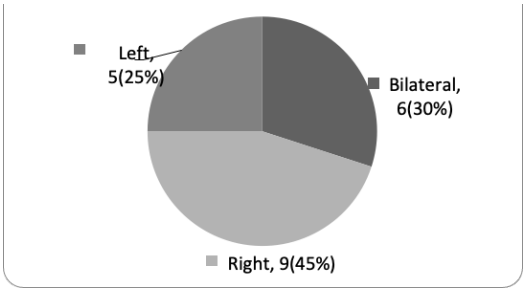

Figure 1: Frequency distribution of site for inverted nipple

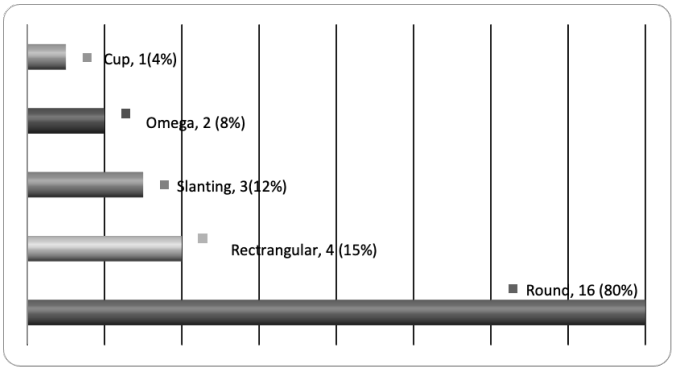

Figure 2: Frequency distribution of shape of inverted nipple

Figure 3: 28 years female with Grade II right inverted nipple since childhood (A: pre-operative, B: post-operative, C: Three months follow up)

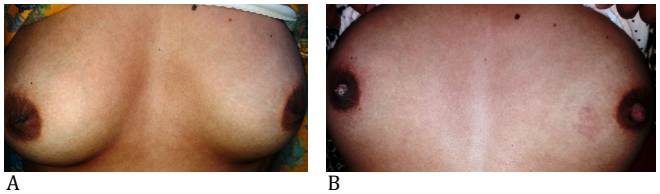

Figure 4: A 38 years female with Grade II Bilateral inverted nipple since childhood (A: pre-operative, B: Three months follow up)

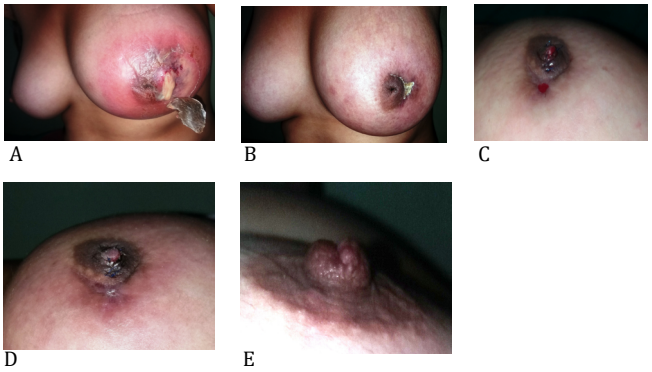

Figure 5: A 18 years female with Grade II Left inverted nipple since childhood and developed with history of peri-areolar abscess for one week (A: pre-operative, B: post incision and drainage of abscess C: Three weeks after drainage of abscess intra- operative post correction of inverted nipple D: During 7th post-operative day E: Three months follow up)

DISCUSSION

The Sakai method was reported in 1999 as a correction method for inverted nipple with the advantages of reliability of its correction results and the preservation of

breastfeeding functionality. This method was applied to 255 inverted nipples the results showed partial necrosis in four nipples, recurrence in five nipples, and study reveal good results.[2] The limitations of this Sakai method is an open surgery, scars will be visible on the skin of the areola.[2]

Various surgical techniques for correction of inverted nipple are available in literature like skin or dermoglandular flap reconstructions,[4,5,7-9] suture techniques,[6,10-12] nipple aspiration, micro-knife techniques, and the unique telescope technique.[13] These all mentioned available techniques showed good results. There were eight studies treatment method with preserving the lactiferous ducts, with an average recurrence rate of 0.6% (0.0-4.2%).[14-21] Five studies reported a treatment method damaging the lactiferous ducts with an average recurrence rate of 9.9% (0.0-22.0%).[22-26]

The correction of inverted nipples is not simple thing because presence of subareolar fibrotic band decreased the skin's elasticity. The projection and shape of nipple depends upon the presence of available normal tissue, which usually reverted after excising all fibrotic bands. Hence, in this study Sakai method was opted for the correction of inverted nipples because it is reliable and preserves lactiferous ducts. The causes of inverted nipples are usually benign and congenital anomalies and most of the patients presenting with symptoms are young unmarried adults. The preservation of lactiferous duct will not hamper breastfeeding in future in these patients.

The study showed good and acceptable results after applying Sakai method for correction of inverted nipple but during study pre-operative period the author found significant number of patients with peri-areolar mastitis and abscess, which was managed in two stages. In first stage broad spectrum antibiotic therapy was given for one week and if it turned to abscess, it was drained. The inverted nipple was then corrected in second stage after three weeks duration. The causes of mastitis and abscess could be due to the patients' poor compliance to personal hygiene care. The study showed 1(5%) case of recurrence which was corrected and acceptable after the re do surgery.

The possible limitations of this study include small sample size and the duration of follow-up was only three months. The exact status of breast-feeding was unknown because the majority of female adults group belonged to young females age between 18 to 30 years.

CONCLUSIONS

The common type of inverted nipple was Grade II, followed by Grade III and the defects were successfully corrected using Sakai method.

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