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SELECTIVE MICRODOCHECTOMY IN MANAGEMENT OF SINGLE DUCT PATHOLOGICAL NIPPLE DISCHARGE: A CASE SERIES

General Surgery

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ABSTRACT

Background: Isolated single-duct nipple discharge is worrying and poses a surgical dilemma. Factors predicting malignancy are controversial. This study evaluates microdochectomy as a mean for diagnosis and treatment of patients with pathological nipple discharge. **Materials and Methods: Study design:** This study is a case series, a prospective, longitudinal, interventionist study, Study area: Ramakrishna Mission Seva Pratishthan Hospital, Kolkata, **Study period:** June 2019 to June 2022 (3 years), **Sample size:** 12 cases, **Inclusion criteria:** Female patients presenting with pathological nipple discharge due to breast pathology coming from a single lactiferous duct, **Exclusion criteria:** Pregnant or breast- feeding patients with physiological nipple discharge or not giving consent or unfit for surgery. **Methodology:** Microdochectomy and excision of the single duct system was done in all cases. **Results:** The mean Age (Years) (mean ± s.d.) of patients was 37.00 ± 8.24621. Of the 8 patients in our study, 3(37.5%) patients had a Serous discharge, 2(25%) had Sero-purulent discharge and 3(37.5%) had a Sanguinolent discharge. Histopathological analysis of the microdochectomy specimens showed that 6(75%) patients had Duct Ectasia, 1(12.5%) patient had fibrocystic breast disease, 1(12.5%) had Duct Papilloma. All findings were Benign. **Conclusion:** Microdochectomy is a safe and effective in managing women with persistent, spontaneous, single duct pathological nipple discharge, providing symptomatic relief and a cosmetically better option.

KEYWORDS

Pathological nipple discharge, microdochectomy, duct ectasia, intraductal papilloma.

INTRODUCTION

Pathological nipple discharge is defined as unilateral, spontaneous discharge from a single duct during non-lactational period[1]. Nipple discharge is a complaint of approximately 5% of women[2] and the third most common breast complaint after breast pain and breast mass[3]. Most nipple discharge is benign in origin (97%)[3].

Causes of pathological nipple discharge include – Fibrocystic breast disease, Duct ectasia, Intraductal papilloma, infection(periductal mastitis), breast abscess, Neoplastic process of the breast(e.g., Intraductal Carcinoma, Paget disease of the breast), thoracic or breast trauma, pituitary tumor or Prolactinoma, Systemic disease or endocrinopathies that elevate prolactin level(hypothyroidism, disorders of pituitary gland or hypothalamus, chronic kidney or liver disorders), a side-effect of medications that inhibit dopamine secretion (e.g., opioids, oral contraceptives, antihypertensives (methyldopa, reserpine, verapamil), antidepressants, and antipsychotics)[4,5,6,7]. Bloody nipple discharge is considered as highly suspicious for malignancy or ductal carcinoma *in situ* of the breast[8].

The imaging techniques mammography and galactography[9] as well as ultrasonography(USG) and magnetic resonance imaging(MRI) cannot replace histological examination in patients with pathological nipple discharge. Controversy exists in the diagnostic value of nipple discharge cytology[2,5]. In 10 to 15% of the cases, pathological discharge is the only symptom of breast cancer[2].

Approximately, 55% of patients presenting with nipple discharge have an associated mass, 19% of which are malignant[10]. Management of a spontaneous single duct nipple discharge with no associated mass and normal mammography remains controversial.

Techniques like major duct excision and microdochectomy are used for histological clarification[1,8,11]. This study explores the safety in performing microdochectomy in all patients presenting with spontaneous single duct nipple discharge in a tertiary care centre in Kolkata.

Case Presentations

Patients presented with pathological nipple discharge due to some breast pathology coming from a single lactiferous duct. The discharge was mainly serous, while some presented with sero-purulent or sanguinolent discharge. None had an associated breast lump or any history of pain.

MATERIALS & METHODS

Study Design:

This study is a case series, a prospective, longitudinal, interventionist study.

Study Area:

Ramakrishna Mission Seva Pratishthan Hospital, Kolkata.

Study Duration: June 2019 to June 2022 (3 years).

Sample size: 8 cases

Inclusion Criteria:

Female patients presenting with pathological nipple discharge.

Exclusion Criteria:

1) Nipple discharge during pregnancy or breastfeeding period (physiological nipple discharge).
2) Patients not giving consent for microdochectomy surgery.
3) Patients unfit for General Anaesthesia.

Investigations:

Mammography – of bilateral breasts was done in patients above 40 years age.

Ultrasound – of bilateral breasts and axillae was done in patients < 40 years age.

Procedure Methodology:

Microdochectomy Procedure: Under General Anaesthesia, the discharging point on the nipple was identified by manipulation and expressing the discharge.

A polypropylene suture was inserted via the discharging point into the pathological duct to dilate the tract and to know its extent. Methylene blue dye was injected into the tract via the discharging point in the nipple. An elliptical incision was made – one end just beyond the discharging point on the nipple and the other end upto the end of the pathological duct which was identified by palpating the polypropylene suture. Incision deepened and the whole pathological duct system was identified by the bluish methylene blue stain and was extracted out enbloc and sent for histopathological examination. Incision was closed with subcuticular suturing with 3-0 polyglactin. Compression dressing applied.

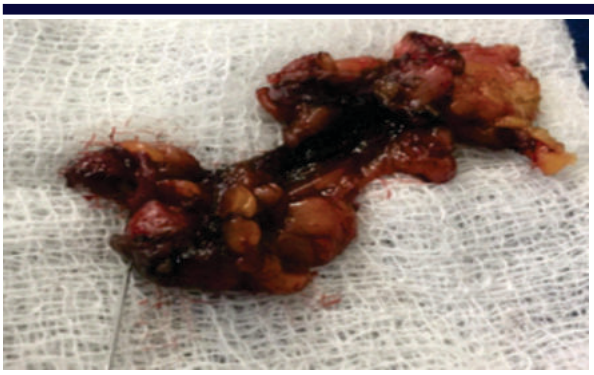

Fig 1: Microdochectomy specimen of the excised pathological duct

Fig 2: Post microdochectomy appearance.

Discharge:
Dressing removed after 48hrs. Wound inspected and redressing done, then discharged.

Follow-up: All patients were followed up after 1 week, 2 weeks, 1 month and 6 months.

Fig 3: Follow-up at 1 month post microdochectomy.

Statistical Analysis:
was performed with help of IBM SPSS version 25.0.

RESULTS & ANALYSIS

In our study, females presented with pathological nipple discharge, the age ranging from 23 to 48 years. The mean Age (Years) (mean ± s.d.) of patients was 37.00 ± 8.24621.

Of the 8 patients in our study, 3(37.5%) patients had a Serous discharge, 2(25%) had Sero-purulent discharge and 3(37.5%) had a Sanguinolent discharge.

Mammography was done in 4 patients who were >40 years of age. In all of them, mammography was normal.

USG of bilateral breasts and axillae was done in all patients, which showed 1(12.5%) patient had fibrocystic breast disease, 1(12.5%) had Duct Papilloma, and 6(75%) had Duct Ectasia.

Histopathological analysis of the microdochectomy specimens showed that 6(75%) patients had Duct Ectasia, 1(12.5%) patient had fibrocystic breast disease, 1(12.5%) had Duct Papilloma, thus corroborating the USG findings. Thus, all the histopathological findings yielded Benign results.

There were no post-operative complications in any patients. There was no recurrence in any patient in the 6 months follow-up period.

DISCUSSION

In a study by Wong L et al[12] on microdochectomy for single-duct nipple discharge, the median age of the patients was 43 years (range 26 – 72 years). In our study, the mean age was 37 years, ranging from 23 – 48 years.

In a study by Burton S et al[13] comprising of 52 patients, nipple discharge was coloured in 12, clear in 21 and blood-stained in 19. In Wong L et al[12] study, 67(73%) patients had blood-stained discharge. In our study, 3(37.5%) patients had a Serous discharge, 2(25%) had Sero-purulent discharge and 3(37.5%) had a Sanguinolent discharge.

In Burton S et al[13] study, out of 52 patients, 42 had undergone mammography out of which only 1 was suspicious with an ill-defined centrally placed mass but histology proved it to be a papilloma and fibrocystic change only. In our study, out of 8 patients, 4 had undergone mammography, of which findings of all were normal.

In a study by Lanitis S et al[1], histolopathological examination of the microdochectomy specimen showed that most of the patients had intraductal papillomas(n=37, 48.7%), duct ectasia(n=12, 15.8%), or a combination of both(n=10, 13.2%). Other benign caused occurred in 9(11.8%) patients and 8(10.5%) patients had cancer. In Wong L study[12], commonest causes were ductal papilloma(52%), and fibrocystic breast disease(21%) whereas, 5% had carcinoma of breast. In our study, histopathological analysis showed that 6(75%) patients had Duct Ectasia, 1(12.5%) patient had fibrocystic breast disease, 1(12.5%) had Duct Papilloma. No cases of malignancy was detected in our study.

CONCLUSION

Microdochectomy is safe and effective in managing women with persistent, spontaneous, single duct pathological nipple discharge, providing symptomatic relief. It is cosmetically better and can be used as a conservative technique with respect to major duct excision and thus can be used as an alternative method in patients who have not completed their family.

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