

Major mammary duct excision with a safe technique-long term follow up

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Introduction

- Major mammary duct excision (MDE), described by Hadfield in 1960, with removal of 3 cm of mammary ductal cone through a circum-areolar incision over half of the areolar circumference
- The procedure is associated with significant complications such as loss of nipple sensation and necrosis of areola or nipple due to devascularization and denervation of nipple areola complex (NAC)

Aim of present study

Aimed at modified technique (See ref 1) for the major ductal excision to observe its complication and benefits with long term follow up.

Pre-operative Assessment

- History of the presenting symptoms including nature of nipple discharge, menstrual and obstetric history were recorded along with lactational and drug intake history. Patients were asked about any previous surgeries and family history of any breast or ovarian malignancy.
- Complete triple assessment of bilateral breasts was done. Patients above 35 years age, underwent mammogram along with breast ultrasound and those under 35 years underwent ultrasonography of both breasts and axillae to rule out any suspicious lesion.
- Patients presenting with active subareolar sepsis, were advised three weeks of oral antibiotics before proceeding with major mammary duct excision.

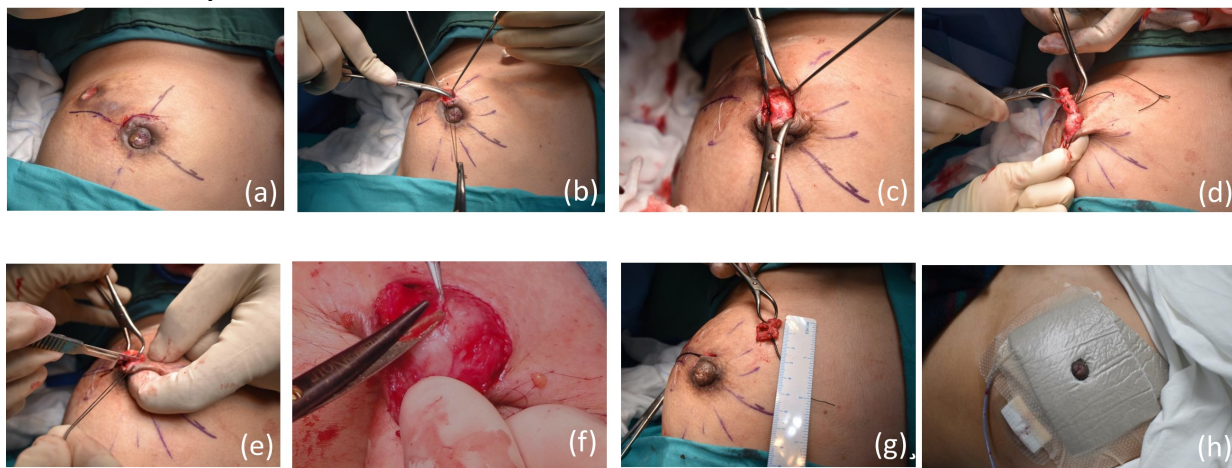


Fig1. Steps of major mammary duct excision (a) periareolar incision extending to one third of areolar circumference (b) stay sutures applied at areolar margin of incision for retraction (c) ductal cone held between 2 towel clips (d) deep end of ductal cone divided (e) nipple end of ductal cone divided using scalpel (f) paring of terminal ducts from the undersurface of nipple using iris scissors (g) excised ductal cone with marking suture at nipple end (h) foam dressing with a hole to keep nipple everted and protected from being compressed

Methodology

- All procedures were performed under local anaesthesia on day care basis by a consultant surgeon experienced in breast surgery using the modified Hadfield's technique as described by Srivastava et al [1].

Follow up Outcome Measures

- The primary outcome was recurrence of nipple discharge, secondary outcome measures hematoma, SSI, pain, NAC necrosis + sensation and cosmesis at 1, 2, and 4 weeks and 6 months
- Pain was assessed on a numerical scale of 0-10, and touch sensation on nipple was evaluated using a wisp of cotton wool.
- Cosmetic outcome was assessed by the patient herself and reported as excellent/good/fair/poor, in that order of decreasing satisfaction.
- The histopathological report of the excised specimen was collected

Results

- Total number of patients = 300
- Mean age 42.9 (range 20-72)

Table 1: Presentation of symptoms and signs

	no.of patients(300)	Percentage(%)
Recurrent subareolar sepsis	132	44
Pain with nipple discharge	177	59
Nipple retraction	58	19.3
Lump	78	26
Mammary duct fistula	21	7

Table 2: Nipple discharge

Nature of discharge	No. of patients (300)	%
Watery	26	8.6
Serous	97	32.3
White/creamy	21	7
Blood	48	16
Cheesy	13	4.3
Green	52	17.3
Black	3	1
Pus	40	13.3

Table 3: Indication for surgery

	No. of patients (300)	Percentage (%)
Recurrent subareolar sepsis	132	44
Recurrent pain with persistent nipple discharge	96	59
Nipple retraction with nipple discharge	37	19.3
Persistent retroareolar inflammatory mass	61	26
Spontaneous bloody nipple discharge	58	18.7
Mammary duct fistula with nipple discharge	33	8

Table 4: Complications

	No. of patients (n=300)	Percentage(%)
Necrosis	8	
Partial	8	2.4
Complete	0	
Hematoma	0	0
Loss of sensation	10	2.8
Pain	10	3.3
Recurrence	5	1.9

Management of Complications

- Partial necrosis of areola healed with no tissue loss at 6 months
- All 5 patients of recurrence were operated again and the residual ducts were removed with good recovery
- Partial Loss of sensation also recovered completely at 6 months with no tissue loss.

Table 5: Histopathological diagnosis of the excised mammary duct

Histology	Number of patients (n=292)	(%)
Periductal mastitis		
only	46	15
With fibrocystic disease	15	8.5
Duct ectasia		
only	56	19.1
With PDM	25	8.5
Fibrocystic disease		
Only	31	10.6
With DE/PDM	20	6.8
Granulomatous mastitis		
Non-tubercular	3	1
Tubercular	6	2
Intraductal papilloma		
Solitary	28	9.6
Multiple	10	3.4
With fibrocystic disease	14	4.8
With DE/PDM	8	2.7
With DCIS	3	1
With IDC and DCIS	3	1
DCIS	9	3
Others:	(15)	(5)
Ductal hyperplasia	11	3.7
Apocrine metaplasia	3	1
Sclerosing adenosis	1	1

Table 6: Cosmesis at 6 months

Cosmesis	No. of patients (n=208)	Percentage (%)
Excellent	172	82.7
Good	36	17.3

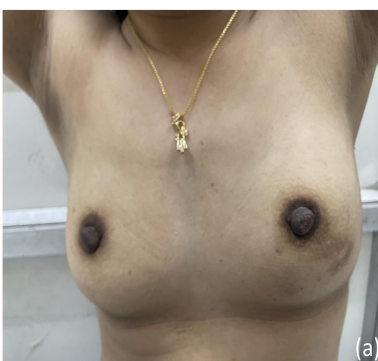


Fig. 2: Cosmetic outcome at 6 months following major mammary duct excision (a) front view (b) side view

Conclusion

- Modified Major ductal excision technique is safe and has better cosmesis
- Complication associated with this modification are fewer
- In patients with pathological nipple discharge, duct excision, either in form of major duct excision or microdochectomy, gives adequate tissue for histopathological evaluation and may help unmask hidden malignancy/high-risk lesions.

Reference

- Srivastava A, Griwan MS, Samaiyar SS, Sharma LK (1995) A safe technique of major mammary duct excision. J R Coll Surg Edinb 40(1):35-37. PMID: 7738895