

## DISCHARGE FROM THE NIPPLE

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Discharge from the nipple, other than the physiological milk, indicates that there is underlying breast pathology, and as such is a most important finding. Its importance and the manner in which it should be handled has in the past been most controversial and confusing, not only to the medical student, but to many a doctor and surgeon.

This short article is written in an attempt to present the position clearly, and to help those who find themselves uncertain on how best to deal with such a patient.

When discharge is associated with a palpable tumour, or other significant clinical finding, then the problem is accordingly dealt with, but when the only presenting sign is discharge, then the problem is immediately made more difficult.

*Factors to Consider*

*Carcinoma* is often the underlying causative factor of the discharge (Fig. 1), and it is precisely because of this that the handling is so important. Figures from the larger series of published cases point to carcinoma being in fact the cause in 25% - 40% of cases. Because of this high percentage, immediate investigation and surgical intervention are imperative in almost all cases.

*The age factor* is important with regard to prognostication. If the patient is under 50 years, then the probable causative factor is benign in the ratio 3:1. In patients over 50 years of age, the causative factor is more commonly malignant in the ratio 2:1 (Table I).

TABLE I. CASES PRESENTING WITH NIPPLE DISCHARGE

Age	Benign	Malignant
Under 50	75%	25%
Over 50	33.3%	66.6%
All cases	60%	40%

*In benign cases of discharge* the underlying pathology has in the past been commonly considered to be that of an intraduct papilloma (Fig. 2). More recently fibrocystic disease has been listed as the commonest cause. While definite intraduct papillomas are frequently demonstrated, their frequent concomitant occurrence with fibrocystic disease is most striking, and I am firmly of the belief that intraduct papilloma, fibrocystic disease, and the adenofibroma of the breast are not distinct disease entities, but should be considered as variations of one and the same

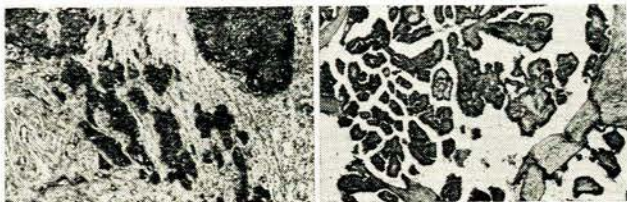


Fig. 1. Invasive intraduct carcinoma.

Fig. 2. Typical appearance of intraduct papilloma.

disease, a disease which is due to an abnormal response to the normal hormonal stimulus.

*The situation of the abnormality* in the breast is significant and interesting. When the disease is due to benign conditions, this benign pathology is generally (in 75% of cases) situated in a central position and near the areola and nipple. Whereas a centrally situated lesion frequently gives rise to a discharge, lesions in the periphery of the breast infrequently have a discharge from the nipple.

*Approximately 10% of all pathological lesions have a nipple discharge and that applies equally to benign or malignant conditions.*

*The character of the discharge* can be significant. The following possible varieties of discharge occur, namely milky, serous, bloody or pussy. Sometimes milk continues to be secreted postnatally in small amounts. A bloody discharge is, like a serous discharge, an indication of pathological change into the duct system of the underlying breast. Whereas a bloody discharge is perhaps more likely to be due to a carcinoma than a serous discharge, the latter can definitely result from a carcinoma, so its presence is of almost equal importance to that of a discharge of blood, in that one cannot determine clinically the underlying pathological state.

*Regime*

In a case presenting with discharge from the nipple the following regime is suggested:

1. Examination of the breast should be very meticulous.
2. A small tumour, thickening or induration in one area may give the necessary clue as to the location of the causative lesion.
3. Sometimes a definite area is found, pressure over which causes the discharge.
4. The radial situation of the orifice of the offending duct will be a pointer as to the segment of the breast involved.

Often one or other of the above factors are present and one can then proceed accordingly, having a fair idea of the segment of breast involved. If, however, they are all absent, then repeated meticulous examination every few days is suggested, at which time it is hoped a localizing sign may present. If, however, at the end of 3-4 weeks, none are forthcoming, one should nevertheless proceed with surgical exploration.

*Operation*

The operative method suggested for such cases is as follows:

General anaesthesia is recommended. Although a radial incision will suffice, I have in recent years placed my incision precisely on the edge of the areola, and have in this way obtained a very pleasing inconspicuous scar.

An areolar flap is then carefully dissected up to expose the nipple bases. Every precaution must be taken to preserve this delicate flap by careful handling, and fine skin hooks or small retractors are used.

The ducts are then exposed, and the attempt made to identify the offending duct. Any dilation or blueness is suggestive. When the responsible duct is found, it is traced to the base of the nipple and cut across. It is then traced

back into the breast tissue for a distance, to make sure that any pathological extension of the lesion has been located. It can then be ligated and cut.

The above sounds simple, but it is in fact not always so, and very often several ducts may have to be explored and often sacrificed by ligating and cutting across. This, however, does no harm. In some cases, in fact, the disease is found in several ducts and only by thorough exploration will these be identified.

**Biopsy.** It is further advised that once the pathological duct has been found, a wedge of breast tissue centred around the duct and extending for  $1\frac{1}{2}$  inches into the breast tissue, should be removed (Fig. 3). This specimen

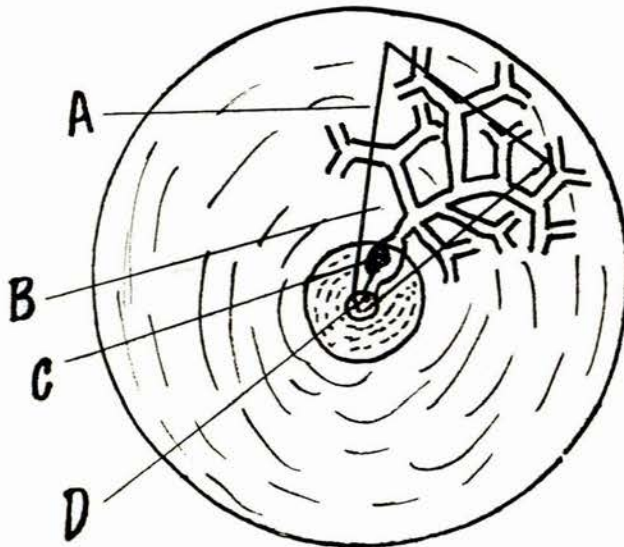


Fig. 3. Diagrammatic presentation of area of abnormal breast tissue. A=suggested wedge of abnormal tissue to be excised which includes papilloma and surrounding pathological breast substance; B=fibro-adenosis surrounding affected duct; C=common situation of papilloma; D=site of duct opening presenting with discharge.

of breast with duct is then subjected to frozen section to determine the pathology and whether or not the lesion has been well circumscribed.

I would like to stress that in order to find the pathological duct successfully, one must be painstakingly meticulous. Dissection should be slow and careful, and the use of diathermy to help with haemostasis is, in my opinion, essential.

**The treatment of choice** in benign pathological cases is the local excision of the pathological area, but if in a case of discharge from the nipple no clearly defined abnormal area can be found, then the possibility of mastectomy must be considered.

**Mastectomy.** Whether to proceed with this drastic operation will depend on many factors and one should be influenced by the following:—

1. The age of the patient. (See above how this influences prognosis.)
2. The duration of the discharge.
3. The nature of the discharge, i.e. whether serous, sanguinous or pussy.
4. Whether on exploration the discharge is found to be

involving a multiplicity of ducts or not.

5. Whether future adequate follow-up is likely or not.

Should mastectomy be considered necessary then the following routine is suggested, with the view not only to eliminating the pathological breast, but replacing it with an artificial prosthesis.

#### MASTECTOMY TECHNIQUE

If this can be successfully carried out, it will avoid the considerable emotional upset associated with the loss of a breast, and will tend to a much happier patient, one who does not feel different, and one who will not have to resort to use of padded brassieres, falsies, etc. Furthermore, the patient will certainly more readily accept and consent to a breast removal, knowing that an internal replacement can be offered.

#### Prosthesis

From recent research in the USA, an excellent prosthesis has been manufactured which consists of a silicone gel incorporated in a silicone rubber bag and supported by a dacron mesh backing. This type of prosthesis not only gives a breast with a 'natural feel' but conforms to the essential requirements, namely, it remains physically and organically inert, remains soft, does not shrink, does not cause inflammatory reaction, becomes attached to the body structure, and finally is not known to be carcinogenic.

With the above prosthesis available, and with the above principles in mind, the operative technique advised is as follows:

An incision is made in or just above the submammary fold of the breast, and through this the breast is enucleated



Fig. 4. Cross-section of breast and chest wall showing line of surgical approach for enucleation of breast through submammary incision.

in such a fashion as to leave the anterior skin of the breast together with the areola and nipple intact (Fig. 4). Frozen-section histological examination can be done after exposure of the breast during the operation, or on the enucleated breast itself.

#### Considerations

Should malignancy be found, then surgery is carried out according to the surgeon's particular preference for dealing with carcinoma of the breast.

If the condition is proved to be benign, then either the prosthesis should be introduced into the remaining cavity immediately, or alternatively the wound is closed, and a delayed operation performed weeks or months later. The decision whether or not to delay introduction of the prosthesis depends on several factors, e.g. the size of the ensuing cavity, the question of infection, etc.

The above description is relative to cases presenting with spontaneous discharge from the nipple. However, opportunity is taken at this point to mention that a similar technique can be used for breasts with chronic mastitis not presenting with discharge, where mastectomy is considered advisable. Augmentation can also be done in cases

previously having had a simple mastectomy, and from a cosmetic point of view for persons with hypomastia or amastia.

#### ILLUSTRATIVE CASES

The following cases under my care are quoted as examples of the general problem involved.

##### 1. Mrs. N., aged 25

This patient presented with the history that for the past month she had noticed a brownish discharge from the right nipple. In addition, for the preceding 10 days the right breast had felt heavy and uncomfortable. She had no pain and had not noticed any swelling. She was nulliparous and had had no previous breast trouble. Her menstrual periods had always been irregular.

On examination, the right breast was larger and fuller in the upper outer quadrant, and a greenish brown discharge could easily be expressed through a duct opening in the upper outer half of the nipple. There was no definite mass to be palpated, but there was slight tenderness in the upper outer quadrant and this breast, as well as the left, had an irregular mastitic feel on palpation.

Operation was advised and a radial incision made outward from the nipple into the outer upper quadrant. Only after careful search was a papilloma found in the distended duct. 'Frozen section' showed this to be a benign intraduct papilloma. The papilloma together with a wedge of surrounding breast was excised. The wound was closed, and after a follow-up period of 26 months she shows no further discharge from the nipple, nor does she complain of any discomfort.

##### 2. Mrs. T., aged 50

The history given was that 3-4 times during the past year she had noticed a brownish-coloured discharge on her night-dress opposite the left nipple. There had been no associated pain or swelling in the breast. There was a slight loss in weight but nothing else was relevant in the history.

General examination was essentially negative, and on local examination of the left breast no mass or induration could be felt. There was minimal nipple retraction and when the breast was squeezed lateral to the nipple a brownish green discharge emanated from a duct opening on the lateral side of the nipple. The breast was explored through a lateral incision, several ducts were isolated, opened, and multiple small intraduct papillomata were found.

Frozen-section examination was carried out. This showed diffuse sclerosing adenosis with prominent intraduct papillomatosis. A wedge of breast tissue was excised. Recovery was uneventful and 24 months follow-up shows no recurrent discharge, or other untoward sign or symptom.

##### 3. Mrs. A., aged 39

The patient presented with a history of a bloody discharge from her left nipple for several months. She had noticed no swelling and had had no pain or discomfort.

On examination, there was no mass or induration to be found, but some tenderness in the upper outer quadrant was present. Pressure over this area caused a blood-stained discharge.

Operation was recommended and the breast explored through a circum areolar incision placed on the upper outer circumference of the areola. The breast had a generalized mastitic appearance. No definite intraduct papilloma could be found. A large wedge of breast tissue was excised from the area. Frozen section showed a well-marked sclerosing adenosis with no malignancy.

Postoperatively she did well and, as she lives outside the Republic making follow-up difficult, she promised to let me know of further trouble. I have not heard from her after 24 months have elapsed.

##### 4. Mrs. O., aged 54

For the previous 4 days she had noticed a discharge on her brassiere, and had felt 'something' inside the breast but had not noticed any swelling. There was no history of previous breast abnormality and there had been a recent gain in weight.

On examination, there was a tender indurated area in the right lower quadrant of the right breast, and a fairly profuse serous, dirty-yellow discharge could be expressed from the nipple.

Exploration was carried out and numerous ducts were found to be filled with a turbid pus-like fluid. The indurated area was excised and frozen-section examination performed. Sclerosing adenosis with associated inflammation was reported. The wound was closed and drainage instituted. The pus was sent for culture and sensitivity tests. A strain of non-haemolytic *Staphylococcus aureus* was cultured. Paraffin section confirmed sclerosing adenosis with some intraduct papillomatosis, with additional focal inflammatory changes.

Despite thorough antibiotic therapy the patient continued to have a discharge from the nipple. A few months later a local mastectomy was performed. Section of the breast showed tiny intraduct papillomata diffused throughout the breast but with no evidence of malignancy. She made an uneventful recovery, but is left with the loss of her breast. This case was

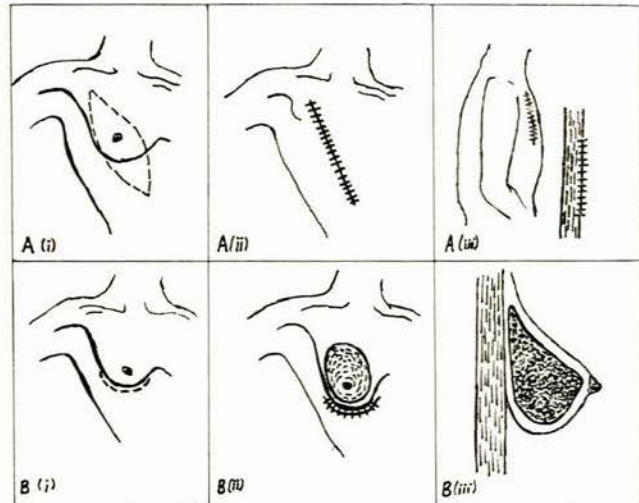


Fig. 5. (A) Showing old classical type mastectomy leaving flat chest with ugly scar. (i) Line of classical incision; (ii) resultant oblique scar; (iii) lateral view. (B) Mastectomy by enucleation through submammary incision and replacement by artificial prosthesis leaving replacement breast and minimal scar. (i) Submammary incision; (ii) breast with intact nipple, areola and artificial breast prosthesis in place; (iii) lateral view.

done several years ago, and before the availability of suitable mammary prosthesis. The case would have been suitable for an augmentation mammoplasty carrying out the delayed operation in view of the infective nature of the discharge. At the present time consideration is being given to the possibility of performing an augmentation mammoplasty on her despite the fact that the present scar is oblique and unsightly (Fig. 5).

##### 5. Mrs. F., aged 48, nulliparous

For the previous 3 years she had noticed a swelling in her left breast, which she thought was gradually getting bigger. Two months previously she noticed a brownish discharge from the nipple. This worried her and she decided to see a doctor. She had had no pain or loss of weight.

Examination showed the presence of a hard mass in the lower outer quadrant with minimal nipple retraction. There was no involvement of the skin, no fixity to the underlying musculature and no glands were palpable in either axilla. A watery clear discharge from the nipple was present.

Operation was carried out and frozen-section examination performed on a wedge from the presenting mass. Diffuse intraduct carcinoma was found and a radical mastectomy performed. She is well and fit 2 years after the operation.

#### Conclusion

I should like to stress the point that one should rigidly adhere to the above principles and manner of dealing with

nipple discharge. The majority of cases will prove to have a benign basis which can be satisfactorily treated but, most important of all, only by following these principles will cases of carcinoma of the breast, where the diagnosis might otherwise well have been delayed or missed, be detected and treated early.

#### SUMMARY

The causes of nipple discharge, other than physiological, are discussed. The underlying pathology in the breast is discussed, and figures quoted from recent series, to show the percentage of benign and malignant cases.

The age factor is stressed with special reference to its importance regarding prognostication.

The significance of the nature of the discharge is discussed.

The method of procedure and management of cases of nipple discharge is considered in detail. A specific regime is suggested for cases with spontaneous discharge, but not associated with other clinical findings.

The operative technique for such cases is discussed in detail. The problem of when to advise mastectomy is also considered.

A special method is described for carrying out mastectomy for cases of benign pathology, in which the breast is removed and replaced by an artificial prosthesis. A brief description of the mammary prosthesis used is given, and other indications for augmentation mammoplasty mentioned.

Five case histories taken at random and their relative treatment are given as examples of the problems involved.

The conclusion arrived at is that if strict principles of dealing with cases of nipple discharge are adhered to, then not only can benign pathology be satisfactorily treated but, most important of all, cases of carcinoma where the diagnosis would otherwise have been delayed or missed can be detected and treated early.

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