

Ductal Fistula of the Breast *

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WHILE adequate drainage through a small radial incision has been the treatment advocated for the well defined breast abscess, an occasional case is seen where such therapy results in persistent morbidity. This is particularly true in those patients in whom the abscess is in the para areola region of the breast. In this area incision and drainage in a few individuals may be followed by a persistent sinus tract. This complication has been an infrequent concomitant of inflammatory disease of the breast. In 1951, Zuska⁴ described five such patients in whom a draining sinus appeared to evolve as the result of obstruction within an abnormal duct system. Atkins,¹ (1955) described this same process under the title of "mamillary fistula." Typically the patients had a small mass eccentrically situated under the areola. Diagnosis was established only after a draining sinus followed multiple attempts at incision or excision of the mass. Atkins proposed that the tract be exteriorized along with its abnormal duct in a manner similar to that recommended for dealing with fistulo-in-ano. Patey³ further recommended that the fistula and its associated duct system be excised *in toto*.

During the interval between 1954 and 1960 ten patients were seen at Brooklyn Jewish Hospital with the picture of breast duct fistula. In each a subcutaneous para areola abscess or draining sinus was pres-

ent. The patients ranged in age from 25-44 years; each had undergone from one to five previous operations in attempts to eliminate the suppurative process, Table 1. Despite what appeared to be adequate therapy at the time, recurrence followed each surgical procedure.

While superficial examination usually revealed discharge from a small granulating orifice (Fig. 1), it was not until a probe was carefully directed through the opening of the fistula and found to pass through the nipple at the opening of the involved duct (Fig. 2) that the diagnosis could be established.

Operation consisted of excision of the

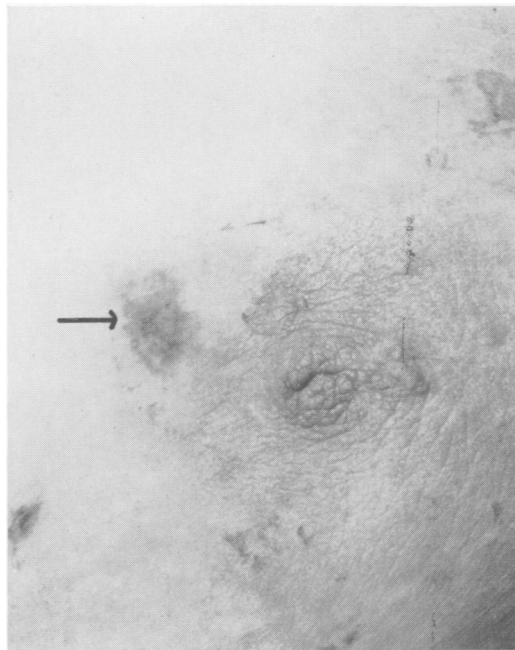


FIG. 1. Draining sinus, seen as a small granulating orifice adjacent to the areola.

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TABLE 1.

Patient	Age	Latest Admission	Pregnancy	Breast Involved	Previous Operations	Nipple retraction
M. R.	36	1954	2	rt.	1	none
F. K.	44	1956	0	rt.	1	none
V. S.	28	1954	2	lt.	4	none
E. V.	42	1956	0	rt.	2	yes
S. R.	37	1958	2	rt.	1	none
L. M.	25	1959	0	rt.	2	yes
J. M.	32	1959	0	bilat.	1	none
H. K.	41	1960	0	lt.	2	none
I. M.	34	1958	0	lt.	5	yes
T. S.	43	1960	2	lt.	1	no

entire abnormal duct and its associated fistula. With a probe in place an elliptical incision was made beginning at the nipple and extended radially to encompass the entire diseased area. Iodoform gauze was used to pack the area of excision; two sutures were placed so as to approximate the area of the nipple. On follow up of each patient to date there has been no recurrence.

Discussion

In sections taken through normal breast tissue, cuboidal epithelium is found lining

the ducts throughout their course. In contrast, the pathologic duct with fistulous tract is lined by squamous epithelium, stratified in many areas (Fig. 3, 4). Characteristically plugs of keratin fill the lumen acting as sites for obstruction.

While consideration has been given for squamous metaplasia developing in areas of inflammatory tissue it is hard to conceive of metaplasia existing without evidence of transition toward the normal cell type. It has therefore been postulated that the process involved here is essentially congenital, the abnormal duct slowly occluding itself

FIG. 2. Probe inserted through the sinus tract and found to extend through the orifice of the involved duct.



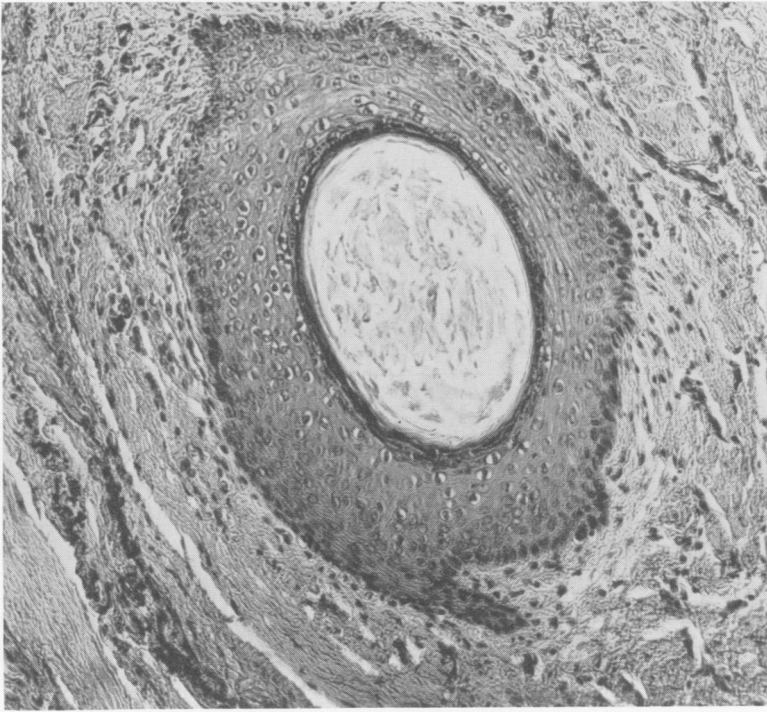


FIG. 3. Abnormal duct containing desquamated keratin within its lumen.

through a process of desquamation. With progressive obstruction, secondary stasis occurs leading to retrograde dilatation of the abnormal duct. This process continues until a small para areola mass becomes discernible. The course depends upon recognizing the underlying lesion and the necessity for

wide excision of the area, rather than on a lesser procedure aimed at local drainage.

Similar obstruction to the duct followed by dilatation has been described in inversion of the nipple. In our series, three patients presented with such a finding. Caswell and Burnett² reported six cases of

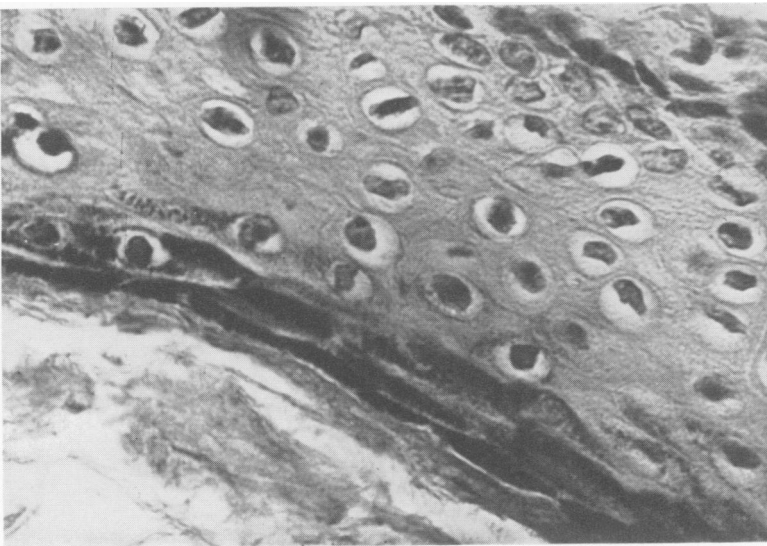


FIG. 4. High power magnification of the lining of the above duct showing the presence of stratified squamous epithelium.

chronic recurrent "peri-areolar" breast abscess all having a history of a congenitally inverted nipple. They postulated that the obstruction occurred at the outlet of the duct which became occluded within the groove created by the inversion. The areas of diseased tissue which developed were treated by excision; wire sutures were used for correction of the nipple deformity.

Conclusion

Abscess formation in the region of the areola of the breast should alert the surgeon to the fact that incision and drainage may not always give desirable results. The possibility of an underlying abnormal duct system should be kept in mind and an at-

tempt made to locate it during the operative procedure. If such a duct is not discernible the patient should be warned of the possibility of developing a draining sinus, and a second operative procedure may be required.

References

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