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INTERNATIONAL ACADEMY OF PATHOLOGY

LONDON MEETING - JUNE 1960.

SLIDE SEMINAR.

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This short commentary may serve to remind you of the excellent slide seminar on proliferative lesions of the breast which was conducted by Dr. L. V. Ackerman and Prof. R. W. Scarff at the recent London meeting of the International Academy of Pathology. The seminar was of particular value because in addition to discussing the significance of certain difficulties in breast pathology, it also laid emphasis on the treatment which the surgeon might be advised to carry out.

Case A1

Clinical details:

The patient was a 43 year old white female who had suffered from dermatitis of the right nipple for a period of 14 years which had become worse during the last year. Examination showed excoriation of the nipple and areola. No definite mass was palpable within the breast and no lymph nodes were palpable.

Histological diagnosis:

Paget's disease of the nipple.

Treatment:

Radical mastectomy.

Pathological findings:

This case was a typical example of Paget's disease, which had a lesion of the nipple and an underlying intraductal carcinoma. On histological examination there was no extension of the tumour outside the ducts and therefore not surprisingly, the axillary lymph nodes were not involved.

Discussion:

Paget's disease commences in the large mammary ducts and spreads up to the nipple. From thence the growth may spread to the areola. The surface lesion thus appears first on the nipple, and if it should appear first on the areola, then it is not Paget's disease. Similar epidermal changes are seen elsewhere, such as the vulva, and these cases are referred to as extra-mammary Paget's disease. It is of interest that if the sections are stained for epithelial mucin, a positive result is often found in both mammary and extra-mammary Paget's disease, particularly the latter.

In this case, because it is considered impossible in sections of a small portion of breast tissue to decide whether spread outside the ducts had or had not occurred, radical mastectomy was recommended.

Case A2 2

Clinical details:

The patient was a female aged 32 who had noted the presence of a mass of three weeks' duration, and in one area of the breast in the region of the nipple, it had ulcerated. There was a lobulated, firm mass not attached to the skin or underlying muscle. It felt cystic. There were no enlarged axillary lymph nodes. Chest film was negative.

Histological diagnosis:

Cystosarcoma phyllodes.

Treatment:

Local removal with removal of underlying pectoral muscle.

Pathological findings:

This was an extremely large tumour and sections of several areas were highly malignant, although many areas showed benign appearances. The patient now has pulmonary metastases.

Discussion:

Size is usually one of the main criteria of this tumour, as indicated by its synonym "giant fibroadenoma". It grows slowly, but may ulcerate the skin and become secondarily infected. Sometimes it becomes attached to the pectoral fascia, but it rarely becomes fixed to the overlying skin. It is frequently benign, but if malignant it is almost invariably the connective tissue element and not the epithelial which undergoes malignant change.

If the tumour appears histologically benign and is not attached to the pectoral fascia, a local removal usually suffices. If the tumour is large and attached to the pectoral fascia, a local mastectomy with removal of the underlying pectoral muscle is considered preferable. Some surgeons in addition do a low axillary dissection, but a complete axillary dissection is probably unnecessary. Even if the tumour appears histologically

benign, the recommended procedure above should be adopted, because in a large tumour it is by no means certain that there is not a malignant portion which has remained unsectioned. If the lesion is microscopically malignant and it is inadequately excised, then it will certainly recur locally and may invade the pleural cavity or give distant metastases to the lung. Involvement of local lymph nodes is not a feature of this tumour. (Note: most of the sections submitted to British participants did not show any areas of malignancy.)

Case A3 3

Clinical details:

The patient was a 77 year old female who had a mass in the right breast. (Six months previously she had a "fibrous" mass removed from the tail of the right breast.) There was apparently a 5 x 5 cm. flat, firm, relatively freely movable mass with well defined borders, not attached to the skin. There were no palpable lymph nodes. Clinically it was thought to be fibroadenoma.

Histological diagnosis:

Carcinoma (sparse cell carcinoma).

Treatment:

Local removal (because of incorrect clinical diagnosis).

Pathological findings:

In the present case there was extensive lymph node involvement and bone metastases. The malignant cells are very few in mumber and may easily be missed; there is also much fibrosis.

Discussion:

This is one of the most difficult slides (especially if a frozen section is being examined), in that the malignant cells may be hard to find. The marked fibrosis prompted one member to ask whether the breast had been irradiated; in point of fact it had not. This condition is not well recognised by pathologists as it has not been given the attention it merits in the literature. In difficult cases the malignant cells may be more obvious if a special stain for mucin is carried out.

Case A4 4

Clinical details:

The patient was a 36 year old female who had a well delimited mass measuring 3 x 3 cm. in the upper outer part of the right breast, not attached to skin.

Histological diagnosis:

Chronic cystic disease (sclerosing adenosis).

Treatment:

Local excision.

Pathological findings:

Macroscopically it closely resembled carcinoma in that the lesion was very hard, owing to the large amount of fibrous tissue present. There were, however, no areas of necrosis. Under the high power, not only is the lesion very cellular but many mitotic figures are present. Lobule formation is very evident and some may be found in the surrounding fat.

Discussion:

Sclerosing adenosis is a name given to a highly proliferative type of chronic mastitis. It is probably one of the most potent sources of error in breast pathology, as it may be mistaken for cancer. In particular, frozen sections may be most misleading and careful examination of a paraffin section is always essential. The low power view is often the most helpful. The diagnosis is made by giving particular attention to the lobule formation generally and noting the circumscription of individual lobules which are separated by connective tissue.

Case S1 5

Clinical details:

A 64 year old nurse had a four months' history of a lump in the upper and outer quadrant of the left breast. It was a small hard mass with some nipple retraction and dimpling of the overlying skin. There were no palpable lymph nodes.

Histological diagnosis:

Chronic cystic mastitis (unusual type of proliferation).

Treatment:

Simple excision.

Pathological findings:

The type of proliferation seen in this case is of the cylindromatous type.

Discussion:

In view of the rarity of this histological picture, it was not possible to obtain any definite opinion as to the prognosis of this case. One person stated that he regarded this type of case with "mixed feelings". Proliferative lesions of the breast are one of our most important problems. It is likely that one will see from time to time a graduated series of epithelial overgrowths varying in amount and degree of typicality, so that at one end we have an almost physiological proliferation, and at the other, solid atypical proliferation with numerous mitoses - i.e. an intraductal carcinoma.

Case S2 b

Clinical details:

A lump, 1 inch in diameter, was found in the lower and inner quadrant of the left breast of a 44 year old woman whilst in hospital for hysterectomy for fibroids. There was no previous history.

Histological diagnosis: Papillary carcinoma

Chronic cystic mastitis (intracystic papillary overgrowth).

Treatment:

Local excision.

Pathological findings:

This case shows massive intraductal papillomatosis, though in no part of the section is there any histological evidence of malignancy. In particular it was noticed that in no part of the section was there any cyst formation, apart from papillomatous cysts and there were no areas of necrosis.

Discussion:

It is generally agreed that a simple duct papilloma will only very rarely undergo malignant change, and a local removal is therefore sufficient. It was of importance, however, to decide whether this lesion carried a greater danger of becoming malignant than did the simple duct papilloma.

The general opinion was that this lesion was not malignant. Local removal of the lump had been performed. Whilst this treatment is probably adequate, certain pathologists feel that malignancy cannot be absolutely excluded. Although the whole lesion may appear to be benign, it is always possible that a small area may have undergone malignant transformation. It has therefore been suggested that in addition to simple mastectomy, the lower axillary nodes should also be removed. Some pathologists consider that these massive papillomatous lesions are segmental in distribution and that a segmental resection rather than a local mastectomy is the ideal procedure. It was concluded that segmental resections were an intermediate form of surgery and that removal of some axillary glands should be performed as a control.

Case S3 7

Clinical details:

From a 20 year old girl who had noticed a lump in the breast for several months. It was painless but had enlarged. A few years ago she had an inflamed nipple. Clinically there was a hard area in the upper inner quadrant of the left breast and lymph nodes were palpable. Eight months later, the condition was unchanged with no apparent involvement of lymph nodes.

Histological diagnosis:

Chronic cystic mastitis ("apocrine" cysts and solid epithelial overgrowth).

Treatment:

Local excision.

Pathological findings:

One striking feature of this case is the large amount of regular "pink staining" epithelium which lines many of the cysts. In addition there are areas of solid epithelial overgrowth.

Discussion:

The "pink staining" epithelium closely resembles that seen in apocrine glands and is probably produced by metaplasia of normal epithelium. The regularity of this epithelium and its nuclei, together with the absence of evidence of rapid division, has caused most workers to regard it as harmless. The solid epithelial areas are another matter, and it is very difficult to decide what these cells may do in the future. It might well be that they become transformed into malignant cells. In this case only a local removal was performed and everyone appeared to agree that at present no further treatment should be given.

Case S4 8

Clinical details:

From a 70 year old woman with a three month history of discharge from the right nipple, which initially was blood-stained. She was in good health. Examination of the breasts showed that a small amount of altered blood could be expressed from the right nipple by pressure on the inner and lower quadrants.

Histological diagnosis: CARCINOMA

Chronic cystic mastitis (solid epithelial overgrowth).

Treatment:

Local removal.

Pathological findings:

In this section the epithelium is thickened and in some places solid. Its mode of growth is irregular and is composed of focal proliferation of the epithelium lining some of the cysts. Under the high power there is great irregularity and considerable variation in nuclear size.

Discussion:

The nature of this type of proliferation is much more difficult to assess than the other examples given. A local removal had been performed and the question remained as to the future treatment. All appeared to consider that the lesion was a serious one and the audience was about equally divided between performing a local mastectomy and a radical mastectomy.

Case A5 9

Clinical details:

5(I) The patient was a 27 year old female who had an indefinite mass in the right breast measuring 4.8 x 3.2 x 2.4 cm. In the centre of the mass was a zone measuring 1.4 cm. in diameter which demonstrated puckering and focal opaque yellow streaking. This patient was seen March 24, 1960.

5(II) Six weeks before admission this patient noted dimpling in the right breast. There was no pain or bleeding. A tumour mass in the upper outer quadrant measured 4.3 x 3.5 x 2.5 cm. in diameter.

Histological diagnosis:

Carcinoma (well-differentiated).

Treatment:

Radical mastectomy.

Pathological findings:

The gross specimen showed all the characteristics of cancer. On section, the tumour was a well-differentiated growth, no evidence of lymph node metastasis being found.

Discussion:

A series of 16 cases of this type studied by Dr. Ackerman showed that in none was there lymph node involvement, and that the 5-year survival rate was 92.9%. In 4 of the cases the growth appeared to have arisen in multiple foci.

In view of the possibility that lymph nodes would not be involved, the question of whether simple rather than radical mastectomy should be performed, was debated. It was generally agreed that radical mastectomy was the ideal treatment, since it was not possible to predict whether a growth was multicentric, nor whether it had involved local lymph nodes.

The validity of tumour grading came up for discussion, and it was remarked that this is the case which should be Grade I. Various opinions were expressed in regard to the value of grading. It was suggested that grading could be useful provided one studied the advancing edge of the

tumour and noted (a) the degree of differentiation, and (b) whether it predominantly "pushed" or infiltrated the surrounding tissue.

It was decided that the successful treatment of breast cancer by hormone therapy could not in any way be predicted from the histological structure.

Case A6 10

Clinical details:

The patient was a 52 year old female with a large mass in the left breast for 14 years with considerable nipple discharge. There was no fixation of the mass to overlying tissue.

Histological diagnosis:

Intraductal papilloma.

Treatment:

Simple mastectomy.

Pathological findings:

The mass was found to be a thick-walled cyst measuring 13 cm. in the greatest diameter. The wall of the cyst was lined partly by smooth, yellowish tissue and partly by roughened haemorrhagic areas. There were lesions beyond the wall of the breast. The histological picture was that of a very large intraductal papilloma with a purely benign appearance. Some small glands may be found in the capsule.

Discussion:

Although it is well recognised that single intraductal papillomata rarely become malignant, the possibility of such a change in these very large lesions is worthy of discussion. When they become very large they may rupture; they may undergo infarction and give rise to considerable haemorrhage. Secondary infection may cause them to become attached to the skin and thus simulate cancer. Duct stasis may cause the macroscopic appearance to suggest malignancy. The presence of small glands in the capsule might suggest invasion, but these are in fact often enclosed in the fibrous tissue. Very rarely the base may show transformation into spheroidal-cell carcinoma, but generally these cases of intraductal papilloma should be regarded as benign and treated as such. If not completely removed, they are obviously likely to recur.

Case A7 ||

Clinical details:

Two years prior to admission, this 51 year old female noted a small lump in the lower outer quadrant of the right breast. One year prior to admission she noted a lump in the outer upper quadrant which progressed to a large ulcerating mass.

Histological diagnosis:

Mucoid carcinoma.

Treatment:

Local removal.

Pathological findings:

Histological examination shows a well-differentiated growth lying in a sea of mucous.

Discussion:

This is a relatively rare tumour which occurs in older women. They are frequently encapsulated and removed by surgeons as benign tumours. Macroscopically they have a grape like appearance, and technically the cutting of frozen sections can be very difficult. A study of this type of case suggests that it does not usually have a multicentric origin, and metastases to local lymph nodes are not seen. If it is removed locally, in almost all cases the patient will be cured. (Many pathologists, however, recommend radical mastectomy.) If an incisional biopsy is performed, the risk of recurrence due to implantation is added. In general it should be noted that the prognosis given above only applies when the tumour is made up entirely of this type of growth. If in addition to mucoid cancer there is mixed histological picture, or if signet-ring cells are seen, then the tumour will behave like any other form of breast carcinoma.

Case A8 12

The patient was a 21 year old white female. Macrogingival changes with hypertrichosis were present some years ago and there was a two year history of massive breast enlargement. There were multiple large poorly defined masses in both breasts without attachment to the skin or deep tissue. There were no palpable axillary nodes. The specimen consisted of two pieces of large lobular fatty tissue. This is said to be from a bilateral mammectomy.

The mass of tissue from the left breast weighs 2100 grams and contains two large masses, the largest being 21 x 9 x 8 cm., and the other was 11 cm. in diameter and 6 cm. in thickness. Sections of these masses reveal firm, cream-coloured tissue with interlacing white, fibrous bands. Numerous other small nodules are present throughout the remaining breast tissue which consists of loose, adipose tissue.

The right breast specimen consists of loose fatty tissue and connective tissue similar to the left breast. Its total weight is 2200 grams, the largest mass in the right breast is 9 cm. in diameter and on sectioning has a similar appearance to the masses of the left breast.

Histological diagnosis:

Fibroadenoma (giant type).

Treatment:

Local excision.

Pathological findings:

This patient had multiple abnormalities; some hormonal imbalance was considered possible, but a thorough biochemical investigation failed to support this view. Histologically, there is both glandular and stromal proliferation, but in no way was there any suggestion of malignancy.

Discussion:

This is an extremely rare condition and no similar case has been found in the literature. A small number of cases was reported from the floor.