

Mammographic Varicosities Indicative of a Superior Mediastinal Syndrome

A CASE REPORT

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SUMMARY

A knowledge of the anatomy of the venous system in the female breast is important because of metastatic spread of carcinoma from the breast and because the veins provide the key to the course followed by the lymphatics. In addition, an abnormal calibre of the superficial veins can reflect not only underlying breast pathology, but a collateral venous return resulting from an upper mediastinal obstruction. A case mammographically demonstrating mammary varicosities resulting from a superior mediastinal syndrome is described.

S. Afr. Med. J., 48, 1913 (1974).

The venous system in the female breast is extremely important because carcinoma may spread through the veins and so metastasise to lungs and bone. Also, the veins are the key to the lymphatic pathways which in general follow the course of the veins.¹

ANATOMY OF MAMMARY VEINS

The veins lie below the superficial layer of the superficial fascia, and Massopust and Gardner² classified them into two anatomical patterns — the transverse and the longitudinal. In the transverse form, the veins converge towards the sternal edge on both sides before turning inwards to join the perforating branches of the internal mammary veins which penetrate the chest wall. In the longitudinal type, the veins converge towards the suprasternal notch and drain into the superficial veins of the lower neck to empty into the anterior jugular veins on both sides. The two patterns can be well shown by using infrared photography.

The superficial subcutaneous veins may mammographically reflect the degree of hyperaemia of underlying lesions, both benign and malignant, and their calibre may also indicate a collateral venous return.

There are three groups of deep veins carrying blood from the breast and chest wall. The perforating branches of the internal mammary vein form the largest group, particularly in the upper three interspaces. These empty into

the left and right innominate veins and compression of either of these by an adjacently sited mass or enlarged gland will cause a retrograde distension of the internal mammary vein and its perforating branches.

The second group comprises the axillary vein and its many tributaries received from the chest wall, the pectoral muscles and the deep surface of the breast. They are variable in their arrangement. The third deep venous communication is directed posteriorly through the intercostal group of veins. These communicate with the vertebral veins and finally drain into the azygos vein and superior vena cava. Extrinsic compression of the superior vena cava may therefore result in distension of the intercostal vessels and of the azygos vein itself.¹

A superior mediastinal syndrome, from whatever cause, can be clinically diagnosed by observing the dilatation of the superficial veins of the upper trunk and neck, the cyanosis and oedema, and the raised non-pulsatile jugular venous pressure.

The case presented showed marked bilateral varicosities of the superficial veins of both breasts, and is, to my knowledge, the first mammographic representation of a collateral venous pathway secondary to an upper mediastinal obstruction.

CASE REPORT

An elderly obese female, aged 73 years, had noticed a hard lump in the left breast during the previous 4 weeks. The mass was painless and did not increase in size during this period. There was no nipple discharge and no nipple retraction.

Ten years previously, she had been admitted to hospital with a non-toxic multinodular goitre, mostly affecting the left lobe. Clinically it showed retrosternal extension which was confirmed by an X-ray film of the chest. The radiograph showed a superior mediastinal mass which was considered to be an enlarged thyroid displacing and compressing the trachea. As the patient was in congestive cardiac failure at the time, the thyroid was not dealt with surgically.

Three years later she was again admitted to hospital, complaining of chest pain, shortness of breath and swelling of the legs. Clinical examination showed bilateral raised non-pulsatile jugular venous pressure and conspicuous veins coursing across her chest. Both carotid pulses were displaced posteriorly, but no bruits were heard. A superior

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mediastinal syndrome resulting from retrosternal thyroid enlargement was diagnosed.

A mammogram, done to assess the significance of the palpable breast nodule, showed a small dominant lesion in the left side which was variable in density and had spiculated margins. It measured $1,5 \times 1$ cm. There was no microcalcification, but skin thickening and retraction were observed superiorly. The features were those of a scirrhous carcinoma (Fig. 1). The striking mammographic feature, however, was the varicose dilatation of the subcutaneous veins on both sides. These were considered unlikely to be secondary to the underlying neoplasm, since the venous distension was excessive and the degree of

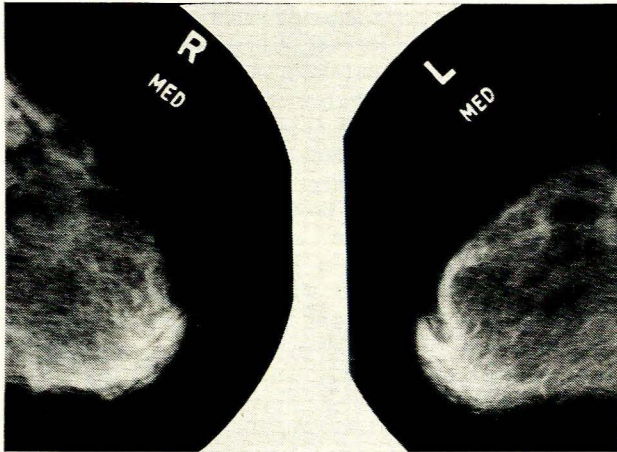


Fig. 1. The small opacity 9 cm deep to the nipple represents the carcinoma.

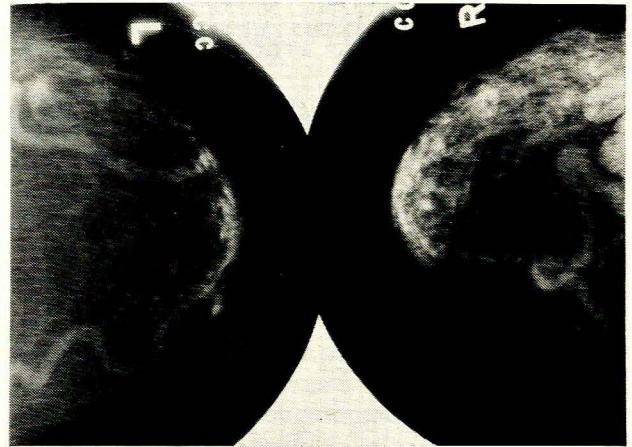


Fig. 2. The bilateral varicosities are well shown.

dilatation of the veins was comparable on both sides (Fig. 2).

The gross varicosities therefore represented a collateral venous return resulting from the effects of the enlarged retrosternal thyroid gland.

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