INTRODUCTION

Early breast cancer can be defined as the presence of a mobile tumor within the breast with or without associated mobile enlarged lymph nodes, and represents the vast majority of patients who present now with breast cancer ***(1).***

For many years, axillary lymph node dissection has been used routinely for the staging and regional treatment of all patients with clinically localized breast cancer. This concept is now called into question for several reasons. Increased awareness of the disease and screening programs has led to a rise in the proportion of patients presenting with early-stage disease. These are the patients in whom axillary dissection often fails to yield positive lymph nodes ***(2).***

The relevance and technique of lymph node staging in patients with breast cancer are currently in a state of flux. Is axillary lymph node dissection worthwhile in patients with small primary tumors? Is importance of the tumor status of the lymph node may be surpassed by primary tumor characteristics? The trend for the past four decades has been towards more conservative loco-regional treatment. So breast-conserving treatment was introduced as we know it combined with axillary node dissection and

followed by radiotherapy of the breast. This trend for more conserving treatment is continuing. Radiotherapists are conducting a European study to determine whether radiotherapy can be omitted safely in selected patients. It was to be expected that surgeons investigate whether axillary node dissection can be omitted safely in selected patients ***(2).***

Axillary dissection can be accompanied by many complications such as arm complications including stiffness, loss of sensation and swelling. Postoperative infection is reported to occur in 5% to 14% of patients. The intercosto-brachial nerve can be inadvertently damaged during axillary dissection, causing numbness and parasthesia in the inner side of the upper arm. Some restriction of shoulder movement is not uncommon. Lymphedema is one of the most dreaded complications of axillary dissection and, once established it is refractory to treatment ***(3)***

In view of the morbidity associated with axillary dissection, it would theoretically be desirable to omit this procedure whenever the possible morbidity clearly outweighed the clinical benefits or when the risk of axillary metastases is very low or when knowledge of node status will have no influence on therapy ***(4).***

Controversy continues to surround the best practice for management of the axilla in patients with early breast cancer (EBC) particularly the clinically negative axilla. The therapeutic and staging roles of axillary surgery (with the consequent morbidity of the procedures utilized) have altered. This is due to the increasing frequency of women presenting with early stage disease the more widespread utilization of adjuvant chemo therapy ***(5).***

The sentinel lymph node biopsy is performed to predict the indication of axillary node dissection. However, slow or faulty radiotracer distribution, expended operative time, and prompt decisions based on the analysis of frozen sections by pathologists are problems of sentinel lymph node biopsy. The sentinel lymph node biopsy has 1-15% false negative results. Thus, less invasive modalities such as ultrasound (US), power Doppler US, mammography, computed tomography(CT), dynamic contrast enhanced magnetic resonance imaging (MRI) and positron emission tomography (PET) have been increasingly attempted to stage an axillary lymph node preoperatively and to diagnose a malignant lymph node ***(6).***

US had been the most widely used method for the evaluation of lymph nodes. Moreover, preoperative lymph node staging with US combined with either fine needle aspiration or core needle biopsy can achieve high

diagnostic accuracy. The assessment of axillary nodal status, size, morphology, cortical thickness, and vascularity are used as feasible diagnostic criteria. Of these criteria, longitudinal-transverse (LT) axis ratio, concentric or eccentric cortical thickening, and absent or displaced fatty hilum on gray scale US and higher peripheral vascularity on power Doppler US are reported as the most reliable criteria for predicting metastatic lymph nodes. However, some criteria such as cortical thickening or displaced fatty hilum are subjective ***(7).***

In summary there is still a need to justify not performing a recognized effective method of axillary staging on a case-by-case basis because the axillary status is still the most reliable prognostic indicator for planning a patient's management. If the woman is at low risk of axillary disease and the result of axillary staging is highly unlikely to alter the management, then breast conservation surgery with radiotherapy to the breast and axilla or occasionally 'watch' policy can be valid alternative ***(5).***

AIM OF THE WORK

The aim of the study is to show the value of axillary dissection in early breast cancer.

Surgical Anatomy of the Breast

Topographic Anatomy and Relations

Though the terms "mammary gland" and "breast" are not synonymous, the latter will be used here for simplicity to indicate both the gland and the associated regional skin, fat, and connective tissues as described hereafter.

The adult female breast is located within the superficial fascia of the anterior chest wall. The base of the breast extends from the second rib above to the sixth or seventh rib below, and from the sternal border medially to the midaxillary line laterally. Two-thirds of the base of the breast lies anterior to the pectoralis major muscle; the remainder lies anterior to the serratus anterior muscle. A small part may lie over the aponeurosis of the external oblique muscle.(8)

In about 95 percent of women there is a prolongation of the upper lateral quadrant toward the axilla. This tail (of Spence) of breast tissue enters a hiatus (of Langer) in the deep fascia of the medial axillary wall. This is the only breast tissue found normally beneath the deep fascia.

Skin

The epidermis of the areola and the nipple is distinguished from that of the surrounding skin by the pink color imparted by blood vessels carried close to the surface in long dermal papillae. In females at puberty, and with each pregnancy, there is an increase in the melanin content of the basal cells, further darkening the area. The dermis of the skin merges with the superficial fascia, which envelops the parenchyma of the breast.

Superficial Fascia

The superficial fascia **(Fig. 1)** enveloping the breast is continuous with the superficial abdominal fascia (of Camper) below, and the superficial cervical fascia above. Anteriorly, it merges with the dermis of the skin.

Deep Fascia

The deep pectoral fascia envelops the pectoralis major muscle and is continuous with the deep abdominal fascia below. It attaches to the sternum medially and to the clavicle and axillary fascia above and laterally. Along the lateral border of the pectoralis major muscle, the anterior lamina of the deep pectoral fascia unites with the fascia of

the pectoralis minor muscle and, more inferiorly, with the fascia of the serratus anterior. A posterior extension of this fascia is continuous with the fascia of the latissimus dorsi and forms the so-called suspensory ligament of the axilla.

Deep to the pectoralis major muscle, the clavipectoral fascia envelops the pectoralis minor muscle and part of the subclavius muscle and attaches to the inferior aspect of the clavicle, dividing into two laminae, anterior and posterior to the subclavius **(Fig. 2)**. The posterior layer is fused with the fascial anchor of the midportion of the omohyoid muscle and is connected deeply with the axillary sheath. It extends between the axillary fascia, the clavicle, and the coracoid process. Laterally it unites with the anterior layer of the pectoralis major fascia.(9)

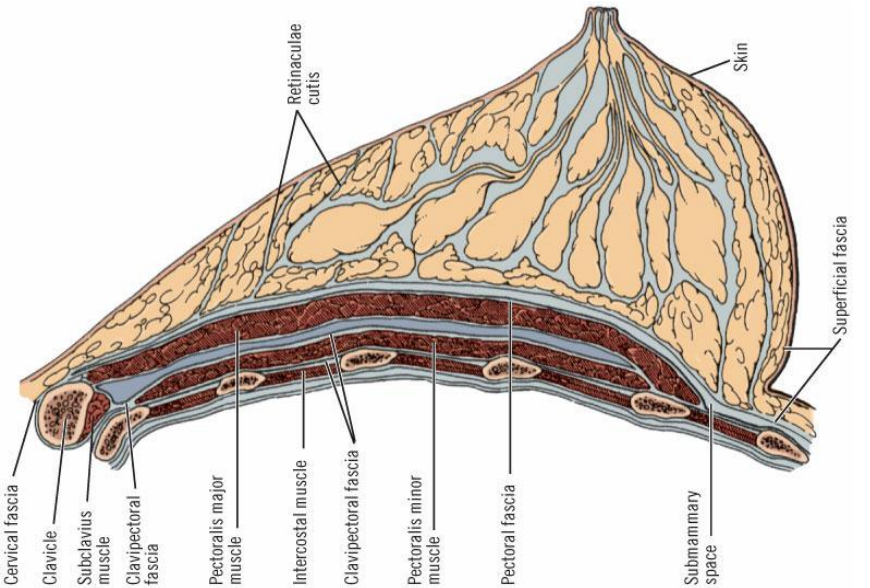

Fig 1. Diagrammatic sagittal section through the nonlactating female breast and anterior thoracic wall.(9)

Laterally, this fascial layer is often thickened as a stout band between the first rib and the coracoid process, and is referred to as the costocoracoid ligament. That part of the fascia between the subclavius and the superior border of the pectoralis minor muscle is sometimes referred to as the costocoracoid membrane. Between the clavicle and the upper edge of the pectoralis minor muscle, this part of the clavipectoral fascia is pierced by the cephalic vein, the thoracoacromial artery and vein, lymphatic vessels and a branch of the lateral pectoral nerve which innervates the clavicular head of the pectoralis major muscle. (9)

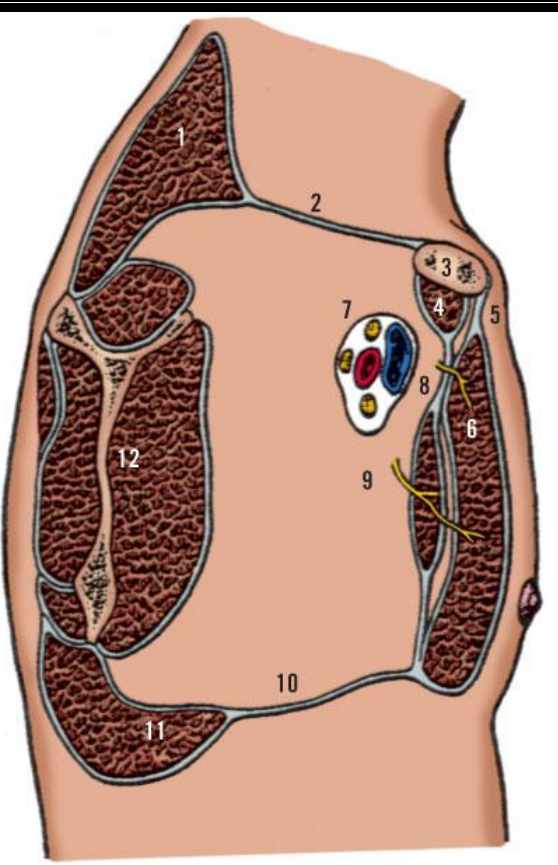

Fig 2. Parasagittal section through the pectoral region. **1.** Trapezius muscle. **2.** Cervical investing fascia. **3.** Clavicle. **4.** Subclavius muscle. **5.** Pectoral fascia. **6.** Pectoralis major. **7.** Axillary sheath. **8.** Lateral pectoral nerve. **9.** Medial pectoral nerve, entering pectoralis minor muscle. **10.** Suspensory ligament of axilla. **11.** Latissimus dorsi muscle. **12.** Blade of scapula.(13)

The axillary fascia lying across the base of the axillary pyramidal space is an extension of the pectoralis major fascia and continues as the fascia of the latissimus dorsi. It forms the dome of the axilla **(Fig. 3)**. As noted earlier, the lamina of muscle fascia which interconnects the pectoral musculature and the anterior border of the latissimus dorsi is referred to as the suspensory ligament of the axilla. Occasionally, there is a muscular interconnection within this fascia, which is called the suspensory muscle of the axilla.(9)

The prevertebral fascia gives off a sheet that covers the floor of the posterior triangle of the neck. Where the axillary vessels and the nerves to the arm pass through the fascia, they take with them a tubular fascial sleeve, the axillary sheath. The axillary vessels and the nerves to the arm pass through the sheet and floor, and take with them a tubular fascial sleeve, the axillary sheath.(9)

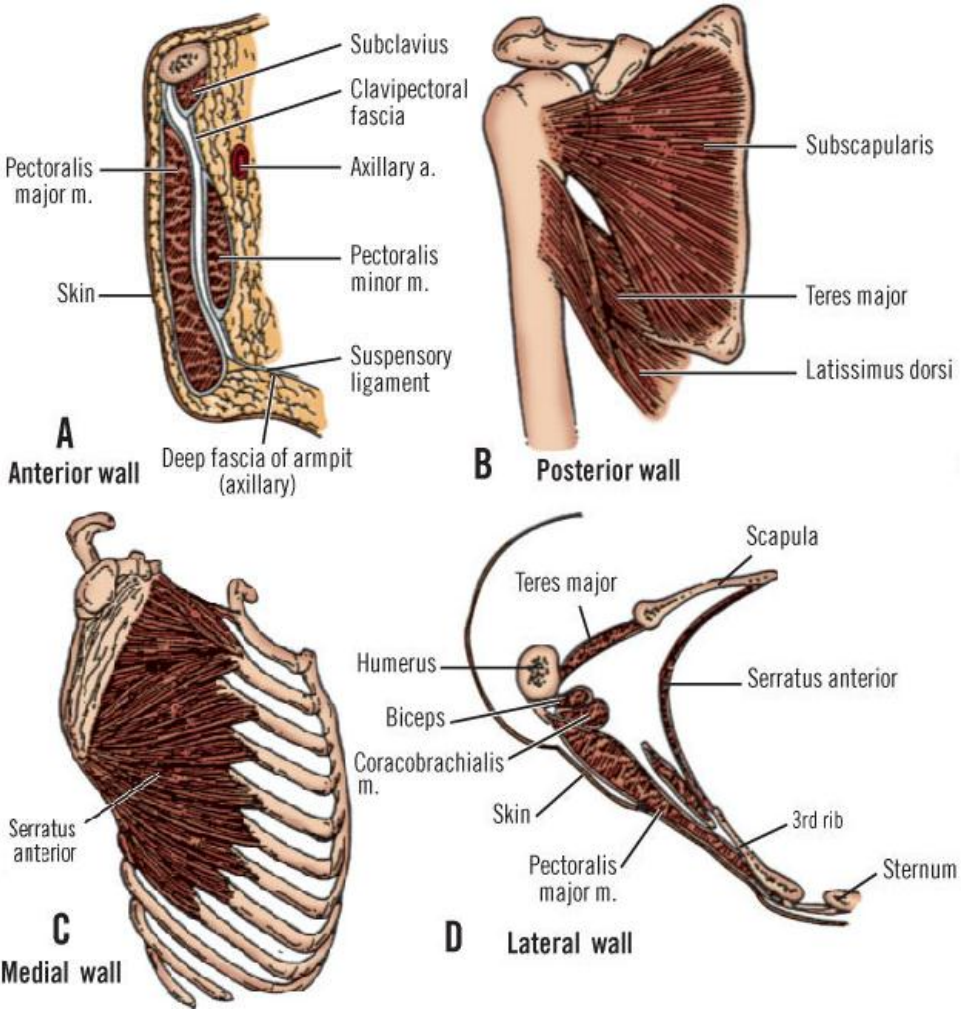

Fig 3. Diagram of the walls of the axilla.(9)