FINE NEEDLE CYTOLOGY
N HEAD AND NECK MASSES IN CORRELATION WITH HISTOPATHOLOGICAL STUDY

Thesis

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Otolaryngology

By

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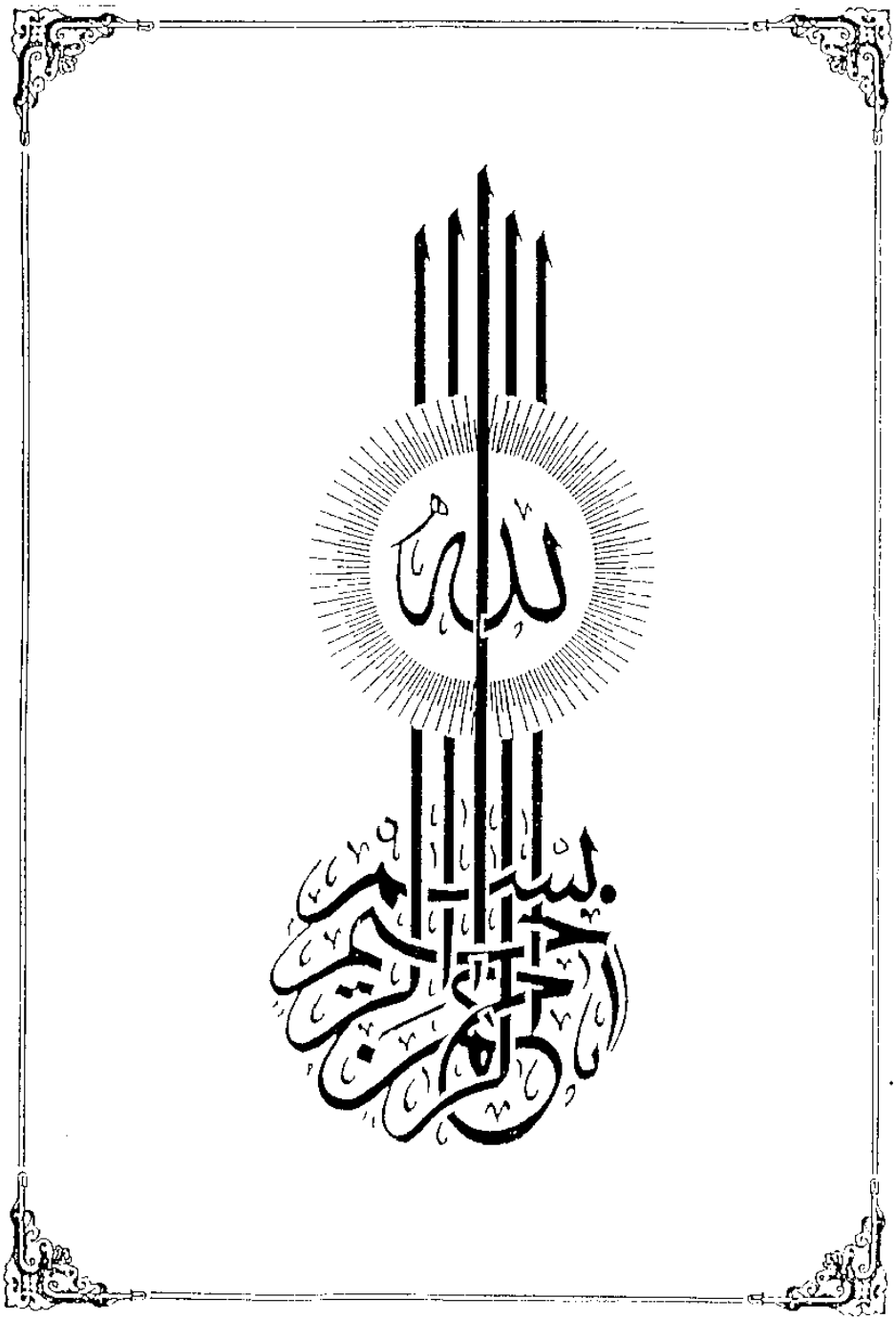
بسم الله الرحمن الرحيم

﴿ رب اشرح لي صدري ويسر لي أمري
واحلل عقدة من لساني يفقهوا قولي ﴾

صدق الله العظيم



To my Parents

Acknowledgement

Prayer full thanks at first to GOD who gave me what I hoped.

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The Candidate

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INTRODUCTION AND AIM OF WORK

INTRODUCTION

Head and neck masses often pose a challenging diagnostic problem to the clinician who is confronted with a maze of possibilities. Clinical examination and the diagnostic aids like radiology and blood tests fail to resolve the vexing problem regarding the nature of the mass. Malignancy remains an important differential diagnosis and a neck mass is often the first or the only symptom of this disease. The final answer regarding the nature of the mass lies in its tissue diagnosis. (Raju et al., 1988).

In an attempt to provide an alternative to premature biopsy of a mass in the head and neck, cytological diagnosis by needle sampling has been in practice since 1930's. This method was widely used in Scandinavia for many years and has shown to be of great value in lung, retroperitoneal, breast and thyroid diseases (Young et al., 1981).

In the practice of fine needle cytology there are several advantages to patients and to doctors. The

technique is simple, relatively painless, with a speedy result, and is cheap (Wilson et al., 1985).

The accuracy of fine needle cytology in many situations, when applied by experienced and well trained practioners, can approach that of histopathology in providing an unequivocal diagnosis. However, it should be stressed that needle cytology is not a substitute for conventional surgical histopathology. It should be regarded as an extremely valuable complement to it (Smith et al., 1985).

Fine needle cytology is used most commonly for the preoperative assessment of breast lumps, but it is also applicable to lymph nodes, thyroid, and other lesions in the neck, and, with the aid of a special needle, the prostate. Modern imaging techniques enable the method to be extended to virtually any part of the body (Lever et al., 1985).

REVIEW OF LITERATURE

REVIEW OF LITERATURE

HISTORICAL REVIEW

For over 100 years the discipline of anatomical pathology has centered on diagnostic histopathology, based on surgical biopsy. The pathologist sitting at his microscope, analysing the arrangement and tectorial patterns of cells, frequently provides the definitive diagnosis by which therapy is planned (Orell et al., 1986).

Velpeau (1856) found that there would be so little danger in extracting a small quantity of tissue from an obscure growth by the use of a needle trocar and cannula, The little substance provided is sufficient for microscopic examination and diagnosis of cancer would no longer be vague.

The first significant study usually cited is that of Greig and Gray who in (1904) demonstrated tryponosomal organisms in lymph nodes. Hirschfeld in (1919) published results of aspiration smears of various tumours.

Guthrie in (1921) published results of a series of lymph node aspirations.

In 1925, several physicians at memorial hospital in New York investigated the use of aspiration smears on a large scale. This experience culminated in the land mark publications of Martin and Ellis who reported 65 cases (1930) and 1400 cases in (1934) and Stewart who reported 2,500 cases in (1933). The procedure described in these reports utilized skin incisions, anaesthesia, 18 gauge needles, air dried thick smears, and staining with hematoxylin and eosin (O'Dwyer et al., 1986).

In Europe in the 1940, a new branch of aspiration biopsy developed, which emphasized fine needles and carefully prepared, then, air dried smears stained with May Gruenwald Giemsa stain. The pioneers of this branch were clinicians such as Paul Lopes-Cardozo, Nils Soderstrom and Sixten Franzen (Koss et al., 1984).

Zajicke (1974) among the first of pathologists to embrace fine needle aspiration, in collaboration with Franzen at the Karolinska Hospital, applied the requisite scientific rigor to define precise diagnostic criteria

and to determine diagnostic accuracy in a variety of conditions. Disciples of these pioneers have spread the gospel to Europe, the UK, the Americas, Japan and Australia, So that the technique should now be part of the service of all sophisticated departments of pathology (Orell et al, 1986).

DIFFERENT TYPES OF NEEDLES

According to Orell et al., (1986) there are:

- The standard disposable 23-22 gauge (0.6-0.7mm), 30-50 mm. long needles are suitable for most palpable lesions.

- Finer needles of 25 gauge can occasionly be used in children and in particularly sensitive areas such as the orbit, but the yeild is significantly sparser. (Orell et al., 1986).

- 12 gauge, 15 gauge and 18 gauge have been used before. It is unequivocally true that the larger the needle, the greater the likelihood of complication and tumour seeding. Complications are virtually absent in the head and neck area with a 22-gauge needle. The larger bore needles also result in a larger plug of tissue which can not be rapidly processed by the techniques of aspiration biopsy. (Frable and Frable, 1982).