

TUMOURS OF THE SYNOVIAL MEMBRANE  
AND TUMOUR LIKE LESIONS

ESSAY

رسالة

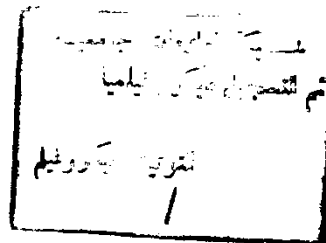
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TO MY MOTHER AND  
MY FATHER



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## INTRODUCTION

## INTRODUCTION

Although growth of the synovial membrane of the joints, bursae, and tendon sheaths are of course not bone tumours they often develop in intimate association with bones and at times may even extend into them.

This essay includes some additions and minor changes to bring the subject of synovial tumours up to date.

In looking to their close pathologic relationship it appears logic to consider the lining of synovial joints, bursae and tendon sheaths as a single unit for the purpose of discussing tumours and tumour like lesions of the synovial membrane.

In the old literature a number of lesions roughly classified as tumours that are not exactly neoplasms or their pathologic findings are discussed.

Therefore, the common ganglion developing through myxoid degeneration and cystic softening of the connective tissue of a joint capsule or tendon sheath, it constitutes

a tumour only in the limited clinical sense of a swelling. Further the condition of synovial bursal or tenosynovial osteochondromatosis may be convincingly interpreted as self limited metaplastic process rather than true neoplasm as well be indicated presently.

Continuing the tumour like lesions that have been called giant cell tumour, benign synovioma and giant cell synovioma have been a subject of controversial interpretation.

If we set the condition, mentioned there are actually relatively few tumours that are observed with only appreciable frequency.

The benign tumours that are encountered occasionally on the lining surfaces of articular capsules and tendon sheath, are mainly haemangioma of the synovial membrane derived from its blood vessels. Fibroma is listed in some old classifications. As for primary malignant neoplasm. The only one of practical importance is synovial sarcoma.

The neoplasm is being recognized with increasing frequency by pathologists now that its specific cytologic picture have been well defined although the problem of effective treatment is still not yet resolved.

While the finding of such tumours as malignant haemogioendothelioma, liposarcoma and fibrosarcoma among others is theoretically possible, actual recorded experience within the sites where the synovial membrane to be non-existent.

HISTOLOGY OF THE SYNOVIAL  
MEMBRANE AND PHYSIOLOGY  
OF SYNOVIAL  
FLUID.

The synovial membrane forms the lining of the joints , tendons and bursae.

In addition its cells synthesize the hyalauronate, which is a major component of the synovial fluid, it also facilitates the exchange of substances between blood and synovial fluid.

The synovial membrane varies considerably in appearance depending on local mechanical factors and the nature of the underlying tissues.

For instance the synovial surface of the joints subjected to high pressure is flat and a cellular whereas joints under less stress have a redundant surface lined by cells that resemble cuboidal or columnar cells (Adam, 1966).

The joint fluid and blood vessels may come in close contact with each other. A relationship that probably enhances solute exchange between the two components.

### Histology of the synovial membrane:

The synovial membrane lines the inner surface of the joint capsule and all other intraarticular structures with exception of articular cartilage and meniscus.

The synovial membrane consists of two parts. The first component is the synovial lining ( or intimal layer) bounding the joint space. This layer is predominantly cellular. The second component is subintimal, supportive or backing layer that is formed of fibrous and adipose tissues in varying proportions.

The surface of the synovial lining is smooth, moist and glistening, with a few small villi and finger like folds.

Sections of the synovial membrane along the edge facing the synovial cavity show a single row or sometimes multiple rows of closely packed cells with large elliptical nuclei.

The cellular elements of the joint lining consists of intimal cells (or synoviocytes) and other connective tissue cells including fat cells, fibroblasts, histocytes, and mast cells.



Fig.(1) Photomicrograph of the synovial membrane shows delicate synovial lining resting on a fibroadipose subintimal layer that is rich in capillaries, lymphatics and nerve endings.  
(Peter and Vincent,1984)

Unlike epithelial lining cells, the synovial cells do not rest on basal lamina but blend with the underlying stromal elements, occasionally forming only an incomplete layer at the surface (Lever, and Ford, 1958).

#### Electron microscopic examination:

Examination of section of the synovial membrane by the electron microscopy revealed two principal type of cells which are designated as type A and B ( many cells have features of both types and have called intermediate).

#### Type A cells:

They are found close to the articular surface and are characterized by long filopodia which extend upwards and form a ramifying feltwork of overlapping processes devoid of junctional attachments.

In addition type A cells have a prominent Golgi apparatus, numerous vacuoles-containing granular material, mitochondria and pinocytic vesicles. Under appropriate conditions these cells may engage in phagocytosis.

#### Type B cells:

Less common type which lies deeper than type A cells. They lack cytoplasmic processes and instead they have a well developed rough endoplasmic reticulum. Although it seems different, these cells probably represent