

NODULAR SKIN AND SUPERFICIAL SOFT TISSUE MASSES

Many patients seek medical attention for the evaluation of superficial soft tissue masses. These soft tissue masses are easily found by the patient while performing everyday activities such as bathing or looking at themselves in the mirror. Since these masses are readily identifiable by the patient, they can cause great concern. Fine needle aspiration is a safe, non-invasive, accurate and well-tolerated procedure for diagnosing soft tissue neoplasms.

Most soft tissue tumors are benign; the benign: malignant ratio is approximately 100:1. Metastatic carcinomas to soft tissue are more common than primary sarcomas. With the exception of dermatofibrosarcoma protuberans and epithelioid sarcoma, lesions in the superficial soft tissues are unlikely to be soft tissue sarcomas.

Lipoma

Lipomas are the most frequent soft tissue tumors and can be found anywhere on the body. Tumors range from several millimeters in size to large growths up to 15 centimeters. FNA of a mass that is clinically compatible with a lipoma can be a useful procedure since not all masses, which clinically are thought to be lipomas, are lipomas.

Hibernoma

Hibernoma is a lipoma variant composed of brown fat. Clinically, the lesion is indistinguishable from a lipoma. The tumor usually arises in adulthood and is most common on the upper back. Hibernomas are composed of the same type of cells as are found in brown fat. Brown is most prevalent in the newborn period, but remnants can persist into adulthood and are most commonly found in the neck, axilla, and mediastinum.

Liposarcoma

There are many different histologic variants of liposarcoma. The hallmark feature of these tumors is the presence of lipoblasts. If tissue suspicious for liposarcoma is obtained on FNA, then referral for immediate surgical consultation is recommended.

Pilomatrixoma

Pilomatrixoma, also known as a calcifying epithelioma of Malherbe, is a tumor with differentiation toward hair cells. The tumor usually occurs as a solitary mass on the face or upper extremities. The overlying skin often has a bluish discoloration. Forty percent of tumors arise in children under the age of ten. The tumors can be managed conservatively or surgically excised.

Nodular Fasciitis

Nodular fasciitis is a benign, pseudo-neoplastic proliferation of myofibroblasts. Sudden appearance and rapid enlargement typify its clinical course. Because of its rapid growth, the lesion is often clinically mistaken for a sarcoma. It is one of the more common soft tissue tumors. Nodular fasciitis is most common in young adults between 20-35 years and most commonly occurs in the upper extremities, chest wall and back. Spontaneous resolution can occur. If nodular fasciitis is diagnosed by FNA, the lesion can be conservatively managed.

Ganglion Cyst

Ganglion cysts are pseudocystic swellings attached but not communicating with a joint capsule or tendon sheath. They are usually found near the wrist, finger, toe, dorsum of foot, ankle or knee in young adults. FNA biopsy can be an advantageous method for initial evaluation and treatment of ganglion cysts. FNA biopsy serves to aspirate the myxoid material out of the cyst thereby evacuating the mass.

Localized Giant Cell Tumor of Tendon Sheath

Giant cell tumor is most common in 30-50 year old and they occur predominately on the hand. Finger lesions are typically located adjacent to the interphalangeal joint. On exam, they are fixed to deep structures and usually not attached to the skin. The tumors are benign but possess the capacity for local recurrence.

Epidermal Inclusion Cyst

Epidermal inclusion cysts occur in the subcutaneous tissue, usually following trauma. They are lined by stratified squamous epithelium and contain odiferous pasty material. The lesion can be conservatively managed or excised.

Fat Necrosis

Fat necrosis is a reaction occurring in adipose tissue as a result of mechanical or chemical injury. Clinically, fat necrosis produces a hard mass and can be mistaken for a sarcoma. The lesion can be conservatively managed. The natural history of fat necrosis is for the tissue to become scar tissue.

Nerve Sheath Tumors

Benign schwannoma (neurilemmoma) and neurofibroma are closely related tumors, both of nerve sheath origin. Nerve sheath tumors can arise as an isolated tumor or be associated with disease processes such as von Recklinghausen's disease. There is a malignant counterpart to both of these tumors; the benign form is more common than the malignant variety.

Sister Mary Joseph's Nodule

Umbilical malignancy, also known as "Sister Mary Joseph's Nodules" are soft tissue masses in the periumbilical area usually representing a metastatic tumor from a primary source below the diaphragm. In most cases, the route of metastasis is unclear. The average age of diagnosis is 60 years. Fine needle aspiration can sample the malignant cells and special immunohistochemical stains can be used to help determine the primary site of the malignancy.

Soft Tissue Lymphoma

Lymphomas can present as an isolated soft tissue mass in the subcutaneous fat. We have diagnosed soft tissue lymphomas both in patients with and without a previous history of lymphoma. Aspiration biopsy yields cytologically atypical lymphocytes. Flow cytometry studies can be done to determine the lymphoma sub-type.

Merkel Cell Tumor

Merkel cell tumors are derived from cells present at the undersurface of the epidermis and oral mucosa. The cells are

thought to be touch receptors. The tumor presents as a solitary nodule without ulceration. Half of the neoplasms arise in the skin of the head and neck. Excisional biopsy with clear margins is needed.

Basal Cell Carcinoma

Occasionally, patients with basal cell carcinoma present with a large mass, which does not have the usual clinical characteristics of a basal cell carcinoma. FNA can easily differentiate basal cell carcinoma from other malignancies.

Metastatic Carcinoma

Metastatic carcinoma to the soft tissue may be the initial presentation or the patient may have a known history of malignancy. In our practice, tumors that frequently metastasize to the soft tissue include breast carcinoma, prostate carcinoma, melanoma, and squamous cell carcinoma.

Chondroma and Chondrosarcoma

Chondromatous lesions are characterized cytologically by the presence of chondroid-myxoid material and chondrocytes. Differentiation of chondroma and low grade chondrosarcomas is very difficult. Radiographic imaging studies are helpful in the evaluation of these lesions.

Branchial Cleft Cyst

Branchial cleft cysts can present at any age as a rapidly enlarging firm mass of significant size in the lateral neck. Clinically, the physical examination findings can be of great concern. Fine needle aspiration biopsy of these lesions is ideal since aspiration of the fluid causes the mass to decrease in size and a diagnosis is rendered. Rarely, branchial cleft cysts can harbor malignancy in the lining cells.

COMPANY PROFILE

OUTPATIENT CYTOPATHOLOGY CENTER (OCC) is an independent pathology practice that specializes in performing and interpreting fine needle aspiration biopsy specimens. OCC is accredited by the College of American Pathologists. The practice was established in 1991 in Johnson City, Tennessee. Patients may be referred for FNA biopsy of most palpable masses as well as for aspiration of non-palpable breast and thyroid masses that can be visualized by ultrasound. OCC is a participating provider with most insurance plans. Our primary referral area includes patients from Tennessee, Virginia, West Virginia, North Carolina, South Carolina, Kentucky and Georgia.

DR. ROLLINS

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