EXAMINATION OF A LUMP

M. Shuja Tahir

Abstract: Lump is a new growth or swelling at any part of the body. It requires clinical assessment and investigations for diagnosis.History of beginning or appearance of swelling is asked. If the lump is present on paired parts of the body such as limbs or the breast, opposite healthy side should also be exposed and compared at the same time. Surface of the swelling is palpated and assessed whether smooth or nodular. Margins are palpated and noted whether clearly demarcated, diffuse, regular or irregular. Transillumination of the suspected fluid filled lump is tested in the dark room with the help of a pencil torch. High frequency probes are required to assess the superficial & subcutaneous lumps.

Key words: Lump, Edges, Transillumination, Cyst, Dermoid Cyst.

SPECIAL INTERVIEW

Special information is essential for correct diagnosis and proper treatment.

Age of the patient is noted. History of beginning or appearance of swelling is asked.

History of difficult labor and time of development of swelling is very helpful in diagnosing congenital or lesions associated with birth trauma.

History of primary tumor or secondary deposits is taken.

History about inflammatory enlargement of cervical lymph glands is asked. Following questions are asked;

- When was swelling noticed for the first time?
- How was the swelling noticed?
- Has the swelling increased or decreased in size?
- Is there any other swelling in the vicinity or somewhere else on the body?
- Recent change in size and shape of swelling is noted.
- Is the swelling associated with;
  - Pain
  - Fever
  - Anorexia
  - Weight loss
  - Dysphagia (in case of neck swellings).
  - Dyspnea or hoarseness of voice (in case of neck swellings).

This information helps very much in diagnosing correctly.

EXPOSURE AND POSITION

The area to be examined is fully exposed.

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Peeping through neck of the shirt is not an adequate method of inspection.

If the lump is present on paired parts of the body such as limbs or the breast, opposite healthy side should also be exposed and compared at the same time.

The patient is examined in sitting, standing or lying position.

General examination of the patient is performed before local examination of the swelling. It is performed in a sequence as given below;

INSPECTION

The inspection is performed after adequate exposure.

Dermoid cysts present in mid-line or just above the outer canthus of the eye or around ears.

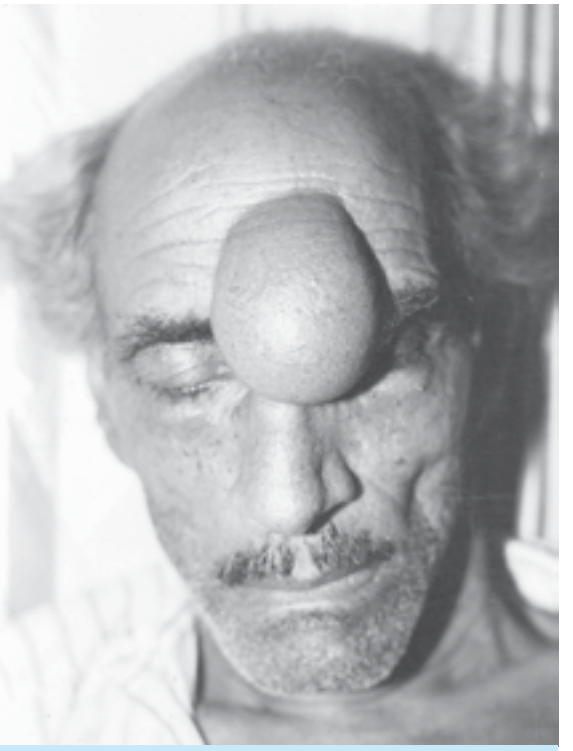
SIZE

It is guessed on inspection. Exact size is measured on palpation

SHAPE

The swelling may have its own specific shape.

- It may be rounded, oval or irregular.
- Squamous cell carcinoma has cauliflower shape.
- Papilloma has numerous branches.
- The swelling may have a long stalk (pedun-culated) or broad base (sessile).
- Exact shape is noted and drawn on the diagram.
- Photograph of the lump is better to keep the record and monitor treatment outcome.



Lump on the forehead

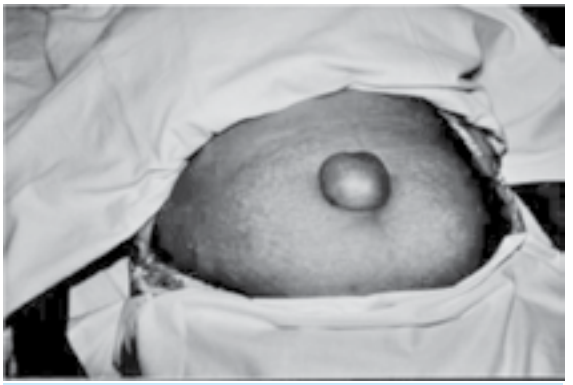
SKIN OVERLYING LUMP

The overlying skin is inspected for following features;

Color

Color of the overlying skin or the lump itself is noted.

Paraumbilical lump



Paraumbilical lump

The swellings or lumps have different color.

This observation may help in diagnosis as;
- Melanoma is black
- Haemangioma is red or purple
- Ranula or mucous cysts are blue
- The abscess is red and glistening

The overlying skin may show multiple openings showing white necrotic material in the carbuncle specially in diabetics. Multiple sinuses are also seen in madura foot mycosis.

Tense and glossy skin is seen over fibrous sarcomas.

A punctum (blue or black) is seen on the convexity of the epidermal inclusion cyst (sebaceous cyst).

Surrounding Tissue

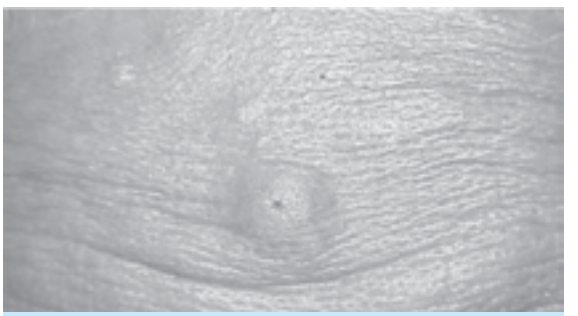
The surrounding tissue is indurated and red in abscess.

It may show peau-de-orange appearance due to malignant infiltration of the skin.

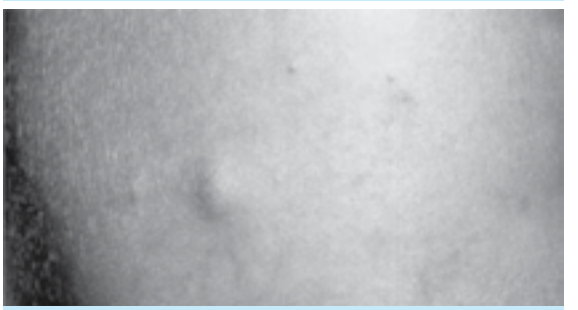
Ulceration

Ulceration may be present due to chronic infection of the superficial areas of the lump. It may occur in the inflammatory lesions such as abscess. It is more common in malignant swellings.

Foot swelling with multiple sinuses



Sebaceous Cyst



Sebaceous Cyst

Visible Vessels

Enlarged and dilated vessels are present over malignant or hypertrophic lesions.

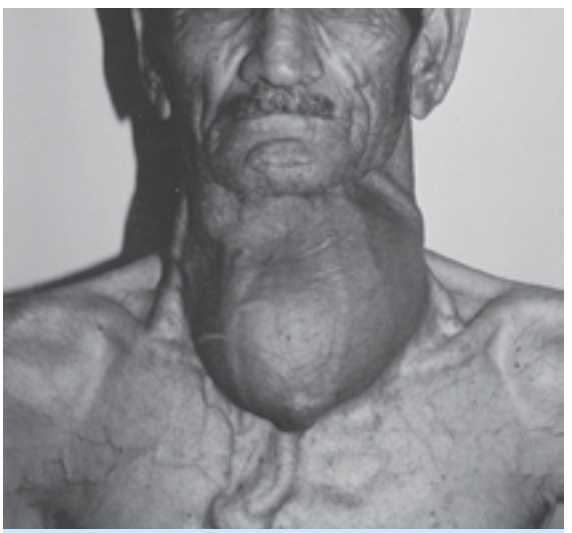
Pigmentation

Hyper or hypo-pigmentation may be seen

over and around the lump.

Peau-de-orange appearance
(Breast carcinoma)

Ulceration (Carcinoma Breast)

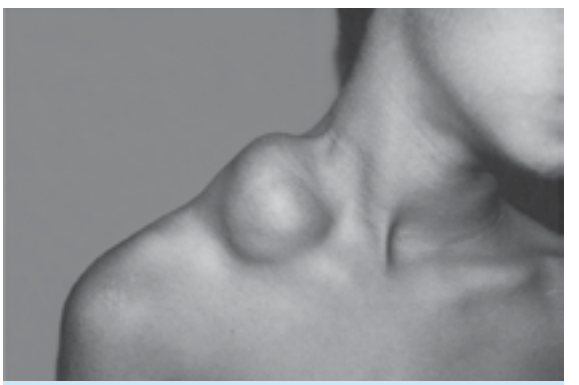


Visible Vessels (Superior vena caval syndrome)

Congenital pigmentation of front of chest

Visible Pulsations

The pulsation may be visible over the swelling if it is present in front of pulsating vessel or in case of pulsating lumps.



Superclavicular lump

Cough Impulse

It is checked in swellings related to head, neck, thorax and abdomen.

It is present in hernial swellings. The swelling becomes prominent on coughing.

Similar swellings are searched on other parts of the body. The diagram of lump is drawn for future reference.

Paraumbilical lump

Lump on the shoulder

PALPATION

superficial or gentle palpation is performed methodically as below;

ANATOMICAL SITE

Exact site in relation to the fixed points is recorded. The lump is drawn in the diagram. Repeated photographs are prepared for monitoring the disease progress.

SIZE

Exact size is measured in centimeters and in two dimensions. The boundary of the lump is marked with a soft marker. The measurement is done between the marks to assess the diameter of the lump, it is preferable to use the caliper for correct measurement. The tape can only measure half of the circumference of the swelling clinically.

SURFACE

Surface of the swelling is palpated and assessed whether smooth or nodular.
(Lipoma and cysts are smooth and rounded.)
Enlarged lymph glands and nodular malignant lesions are rough and irregular.

MARGINS & EDGES

Margins are palpated and noted whether clearly demarcated, diffuse, regular or irregular.

Smooth and well defined margins are seen in benign and innocent lesions.

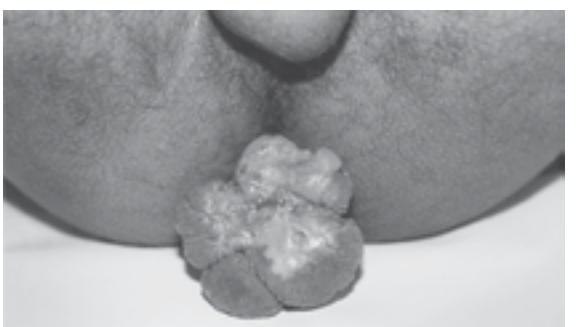
Irregular and rough margins are seen in chronic inflammatory lesions and malignant growths.

LOCAL TEMPERATURE

Temperature of the skin over the lump and surrounding areas is noted. It is felt with the back of fingers.

Compare the temperature difference with normal skin temperature in the nearby area.

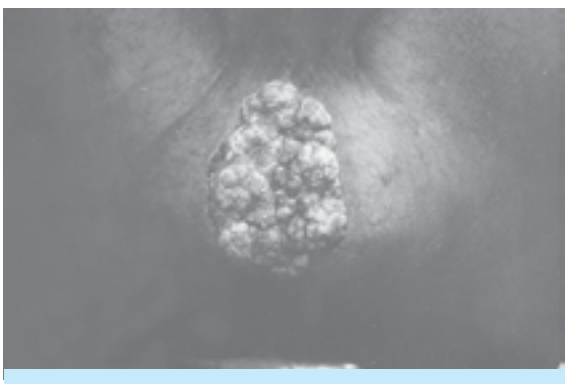
Local temperature is raised in inflammatory lesions and fibro sarcomas.



Perianal lump

Scalp lump

A lump on the ankle



Sessile lump

TENDERNESS

Lump is palpated for tenderness and point of maximum tenderness. The examiner should keep looking at patient's face for expression of pain while palpating the lump.

CONSISTENCY

The lump is palpated and its consistency is noted as soft, cystic, firm or hard. It may be uniform or variable.

Pedunculated lump

Soft

Similar to touch of one's own cheek or baby's bottom. (Lipoma has such consistency).

Cystic

Similar to touch of a water filled balloon. A rounded lump which is fluctuant is (Abscess or cyst).

Firm

Similar to touch of tip of nose.
(Fibroma has such consistency)

Hard

Similar to the touch of forehead. (carcinomas have such feeling)

CREPITUS

Crepitus may be felt over surgical emphysema and in cases of gas gangrene and in fracture of a bone.

FLUCTUATION

It is a test to diagnose collection of fluid within the swelling.

The fluctuation can be elicited on cyst, abscess and fluid-filled lumps. It is elicited

in at least two dimensions at right angle to each other. Fluctuation can be elicited with the help of two fingers only in fixed cystic lumps such as abscesses.

False sense of fluctuation may be felt in;

- Muscles, if the test is done in one plane only
- Lipoma
- Soft fibroma
- Myxoma
- Sarcoma
- Elastic and compressible swellings such as haemangiomas
- Small mobile lump not fixed properly

Buttock abscess

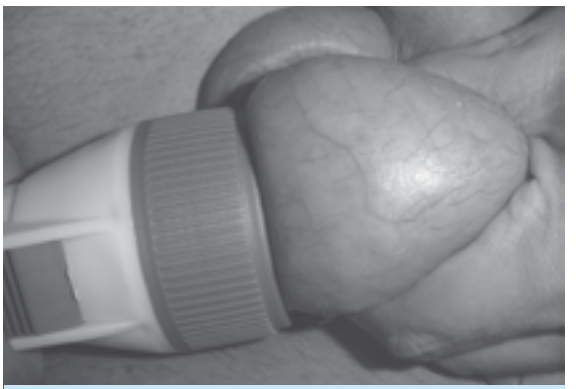
TRANSILLUMINATION

Transillumination of the suspected fluid filled lump is tested in the dark room with the help of a pencil torch.

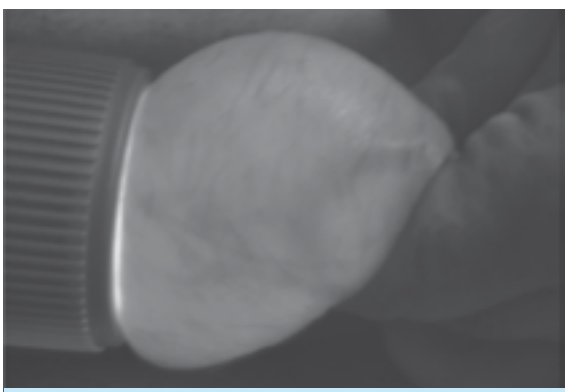
It may also be performed in well lit examination room using a role of dark card or plastic sheet to provide darkness at the cystic lump. The torch is
fixed on one side of the swelling and folded plastic role is fixed on exactly opposite side (at 180°) to see straight to the light.

Subcutaneous fatty tissue is normally translucent. Following pathological lesions show positive Transillumination test;

- Hydrocele.
- Ranula.
- Ascites.
- Meningocele.
- Cystic hygroma.



Transillumination test (preparation in day light) Picture by; Dr. Sajid Shiekh, FCPS



Transillumination test positive (seen in dark room) Picture by; Dr. Sajid Shiekh, FCPS

The test is positive only if the fluid is clear enough to let the light pass through.

REDUCIBILITY

The patient is asked to lie down to see the reducibility of abdominal and inguinal swellings.

The limb is elevated to see the reducibility of limb swellings.The patient may be asked to

reduce the swelling or the swelling may be gently compressed to see its disappearance. Following swellings are completely or partially reducible;

- Hernia.
- Varicocele.
- Haemangioma.
- Lymphangioma.
- Saphena varix.
- Meningocele.

Right sided hydrocele and hernia

Malignant swelling of submandibular gland

MOBILITY & FIXITY

Mobility or fixity in relation to the underlying structures and the overlying skin is also assessed.

Inability to move the skin is seen in inflammatory or malignant lesions after skin involvement and in lesions arising from the skin such as sebaceous cyst.

Following skin and subcutaneous lesions move over the underlying structures such as;

Papilloma.
Sebaceous cyst (Inclusion dermoid)
Epithelioma.

Fixity to underlying muscles is checked by fixing the muscles under contraction beneath the lesion and then trying to move the lump in two dimensions at right angle to each other over the tense muscle.

COMPRESSIBILITY

Certain lumps are compressible. These lumps disappear to some extent on application of compression and reappear after the pressure has been released.

Inguinal swelling

COUGH IMPULSE

It is tested to find out the continuity of swelling with intra-abdominal or intra-thoracic

or intra-cranial or intra-spinous cavities.

The patient is asked to cough when the lump is being inspected or palpated and cough impulse is seen and felt. It is positive in;

- Hernias.
- Psoas or lumbar abscess.
- Empyema.
- Meningocele.

PULSATIONS

The lump is gently palpated to feel any pulsation. It is checked in two dimensions.

The pulsations are clearly recognized whether these are from the lump or surrounding tissue.

The pulse may be transmitted through the lump lying in front of a pulsating structure or from the lump itself such as aneurysm.

LYMPH GLANDS

Regional lymph gland involvement must be confirmed by careful palpation of all the lymph glands draining the area of lump.

The lumps (swellings) are either congenital or acquired.

CONGENITAL SWELLINGS

- Meningocele.
- Teratoma.
- Dermoid cysts.
- Thyroglossal cyst.
- Branchial cyst.
- Cystic hygroma.

ACQUIRED SWELLINGS TRAUMATIC

- Haematoma.
- Fractures.
- Dislocations.

INFLAMMATORY

- Acute abscess.
- Cold abscess.
- Acute or chronic lymph adenitis.

NEOPLASTIC

- All types of benign tumors.
- Primary malignant tumors.
- Secondary malignant tumors.
- Sarcomas.

SONOGRAPHY OF A LUMP

External or superficial lumps are visible and palpable. Physical examination is usually helpful with high level of sensitivity, specificity and accuracy.

High frequency probes are required to assess the superficial & subcutaneous lumps.

Sonography further improves in the sensitivity of diag-nosis, its specificity and degree of accuracy. It further helps to assess the architecture of lump.

PROCEDURE

The area to be assessed is exposed with some adjacent area. Gel is applied and an appropriate probe (5,7.5,10,12 MHrtZ) is used to complete the sonological examination.

Examination and sonographic images are seen in longi-tutinal, transverse and oblique views;

The gel is cleaned after the completion of examination. The area is covered again and report is completed.

Solid lesions are seen more hyperechoic while fluid filled lesions are hypoechoic. Some lesions have mixed echopattern. Size

of the lesion is measured and documented mostly as a photograph. Number of lesions can also be noted.

Sonography of a cystic mass is extremely valuable investigation for diagnosis and assessment of cystic swelling.

The cystic mass shows as hypoechoic mass due to presence of fluid in the closed cystic cavity.

Sonography helps to differentiate very clearly between fluid filled mass and other solid structures.

It helps to diagnose and assess following lumps (masses);

- Cysts
- Abscess
- Hydrocele
- Peritonitis
- Collection of pus or fluid

The progress or deterioration of the disease process and its response to treatment is monitored with repeated sonographic examinations.

Post Traumatic assessment is performed with (FAST). Ultrasound scan in the early post traumatic period is performed in the bed when patient may be even unfit to be moved to radiology department.

Repeated sonographic examinations help to monitor the situation completely and satisfactorily.

ASSESSMENT OF LUMP (SWELLING)

Duration	When was it first noticed and where is it?
First Symptom	What symptoms does it cause?
Progression	How has it changed since noticed first?
Persistence	Has it ever disappeared?
Multiplicity	Has the patient any other lumps or ulcers?
Inspection	Site Size Shape Skin overlying (color/ulcer/sinus)
Palpation	Surface Edge/margins Temperature (hot/cold/normal) Tenderness Consistency (hard/firm/soft) Fluctuation Fluid thrill Translucency Compressibility Reducibility Pulsatility (transmitted / expansile) Fixity to surrounding tissue
Associated Examination	Lymph nodes Distal pulses Distal nerves