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Examination of a swelling



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- Swelling is defined as **Any enlargement or protuberance in the body due to any cause”**

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History

1.Particulars of patients

2. Chief complaints

3. History of presenting illness

4. Past history

5. Family history

6. Personal history

7. Drug history

8. History of allergy

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Particulars of patient

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1. NAME
2. AGE
3. SEX
4. RELIGION
5. OCCUPATION
6. SOCIAL STATUS
7. Address

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History of presenting illness

Begins with the first symptom and extend to the time of examination. Includes

- 1. Mode of onset
- 2. Progression

. 3. Duration

Questions could be asked as

When and how was the swelling noticed

How did it progress in size and appearance

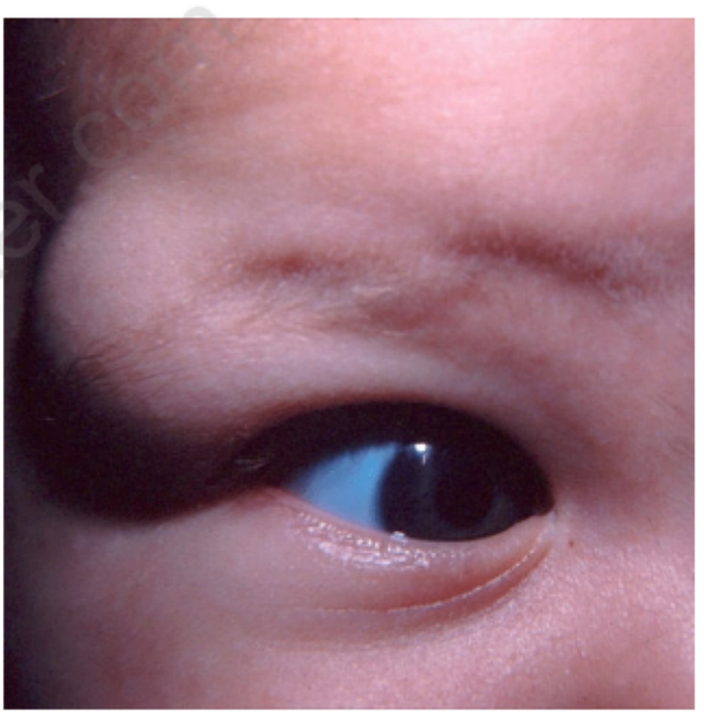
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Swelling history

- Site
- Size
- Number
- Duration
- Mode of Onset
- progress
- Pain and duration
- History of trauma



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- Fever
- Associated Symptoms
- Secondary Changes
- Impairment of Function
- Loss of weight

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- Recurrence
- Past history: Tuberculosis, malignancy
- Personal History: alcoholic or smoker
- Family History: important in ca breast or ca thyroid

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- LONGER DURATION WITH OUT PAIN:BENIGN
- SINCE BIRTH:CONGENITAL
- SHORT DURATION & PAIN: INFLAMMATORY
- LONGER DURATION WITH PAIN AND SHORT DURATION-MAYBE MALIGNANT

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PAIN

- Time of onset: in inflammatory swellings pain appears even before the swelling but in case of tumors swelling appears long before pain.
- In malignant conditions pain is due to involvement of nerves, fungation,ulceration,deep infiltration, which indicates inoperability
- Site: most often pain is localized to the site of swelling. referred pain may be present.
- Nature of pain: throbbing pain suggests inflammation leading to suppuration.

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PROGRESS

- DECREASING IN SIZE-inflammatory swellings
- SUDDENLY INCREASING IN SIZE AFTER REMAINING STATIONERY FOR SOME TIME-malignant transformation of benign swellings
- GROWING QUICKLY-malignant swelling
- GROWING SLOWLY-benign swellings

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- Other symptoms associated with it
- difficulty in swallowing and respiration
- Pain- site /onset /character/radiation/ aggravating and relieving factors
- Secondary changes –ulceration ,fungation and pigmentation

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- History of fever – may be present in lymphoma , inflammatory swelling and malignant swellings
- Family history is important in tuberculosis

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- PAIN----inflammatory or involving nerves
- DIFFICULTY IN RESPIRATION---pressure on trachea
- DIFFICULTY IN SWALLOWING---pressure on esophagus
- INTERFFERING WITH MOVEMENT—swellings near joint
- DISFIGURATION

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Physical Examination

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- 1. General assessment – GC
- 2. Mental status
- 3. Build and state of nutrition
- 4. Gait
- 5. Pallor
- 6.Cyanosis - central and peripheral
- 7. Icterus
- 8. Edema
- 9. Temperature

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Local Examination of swelling

- A. Inspection
- B. Palpation
- C. Percussion
- D. Auscultation
- E. Examination of pressure effect



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Inspection

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- 1. Site/ location- Idea about its origin
- 2. Color –Black, Red/purple, Bluish
- 3. Shape- oval/ globular / spherical
  diffuse /loacalised
- 4. Size- tense / erythematous/ pigmentation
- 5. Number – solitary , multiple
- 6.Edges /margins
- 7. Pulsation

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- 8. Movement on deglutition
- 9. Movement with protrusion of tongue
- 10. Skin over swelling – Red & edematous, tense and glossy, peau-d-orange
- 11. Surrounding area

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Palpation

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- Site
- number
- Size
- shape
- extent
- Temperature
- Tenderness
- Surface-smooth/nodular/lobular/irregular
- Skin
- Edges –Variable/Uniform

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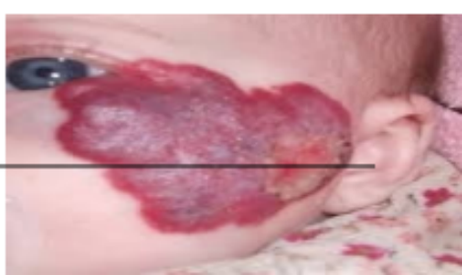
- Consistency-soft/cystic/firm/hard
- Fluctuation
- Translucency
- Reducibility
- Fixity to overlying skin
- Relation to surrounding structures
- Plane of swelling- skin/ subcutaneous tissue/muscle /deep to muscle
- Movement with respiration

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- site: A few swellings are peculiar in their positions such as dermoid cysts are mostly seen in the midline of the body or on the line of fusion of embryonic processes e.g. at the outer canthus of the eye
- Colour: Black colour of benign naevus and melanoma, red or purple colour of haemangioma, bluish colour of ranula are obvious and diagnostic.



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- Shape: whether it is ovoid, pear-shaped, kidney-shaped, spherical or irregular. A swelling cannot be circular as we do not know about the deeper dimension of the swelling.
- Surface: cauliflower surface of squamous cell carcinoma ,irregular numerous branched surface of a papilloma etc. With the palmar surfaces of the fingers, the clinician should palpate the surface of the swelling which may be smooth (cyst), lobular with smooth bumps (lipoma), nodular (a mass of matted lymph nodes) or irregular and rough(carcinoma).

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- Edges: Benign growths generally have smooth margins whereas malignant growths have irregular margins. Acute inflammatory swellings have ill-defined or indistinct margins. The margins are palpated by the tips of the fingers.
- Consistency:It may be ***soft e.g. lipoma; cystic e.g. cysts and chronic abscesses; firm e.g. fibroma; hard but yielding e.g. chondroma, bony hard e.g. osteoma or stony hard e.g. carcinoma.***

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- The swellings, arising from the arteries, are pulsatile, e.g. aneurysms and vascular growths, such as carotid body tumour. The swellings, which lie just superficial to the artery in close relation with it, will be pulsatile. This pulsation is called ***transmitted pulsation,*** whereas those which originate from the arterial walls give rise to ***expansile pulsation.***

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- Movement with respiration: Certain swellings arising from the upper abdominal viscera move with respiration e.g. those arising from liver, spleen, stomach, gallbladder, hepatic and splenic flexures of the transverse colon.
- Impulse on coughing: The swellings, which are in continuity with the abdominal cavity, the pleural cavity, the spinal canal or the cranial cavity, will give rise to impulse on coughing. The patient is asked to cough and the swelling will be seen giving rise to an impulse while the patient is coughing.

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- A few swellings which are fixed to the larynx or trachea move during deglutition e.g. thyroid swellings, thyroglossal cysts, subhyoid bursitis and pre-or paratracheal lymph node enlargement.

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Temperature

- Local temperature is raised due to excessive vascularity of the swelling.
- It may be due to infection or due to well-vascularised tumour (e.g. sarcoma). This examination should be done first in palpation, as manipulation of the swelling during subsequent examinations may increase the temperature without any definite reason. ***Temperature of the swelling is best felt by the back of the fingers.***

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Plane of swelling

- Skin
- Subcutaneous tissue-free from skin and muscle both. skin is pinchable. Freely mobile. prominent when muscle is contracted
- Deep fascia: not as mobile ,difficult to distinguish if arising from subcutaneous tissue
- Fixed to muscle: more prominent on muscle contraction but not as mobile.

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Deep to muscle : disappears

Bone: fixed

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Signs

- Slip sign : lipoma
- Fluctuation
- Translucency
- Cough impulse
- Reducibility
- Compressibility
- Pulsability

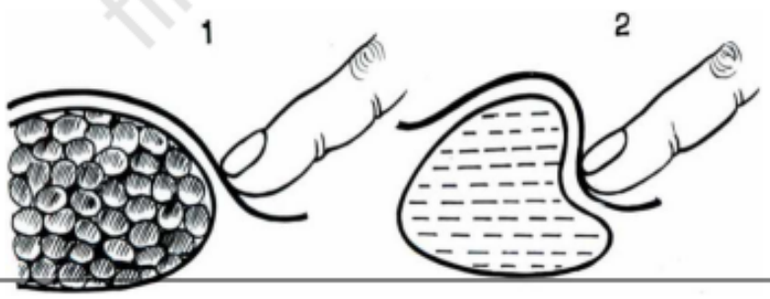
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Slip sign

- Slip sign.— When the edge of a swelling is palpated, the margin of the solid swelling does not yield to the palpating finger but slips away from it; but in case of a cystic swelling the edge yields to the pressure of the palpating finger and does not slip away.



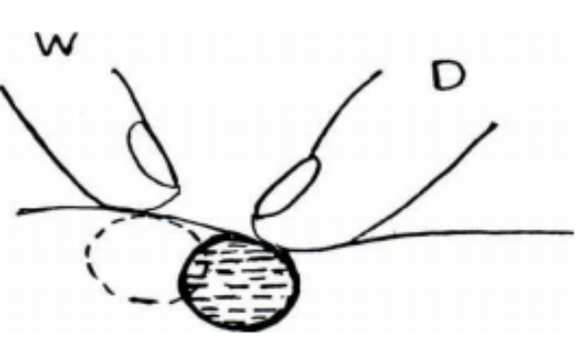
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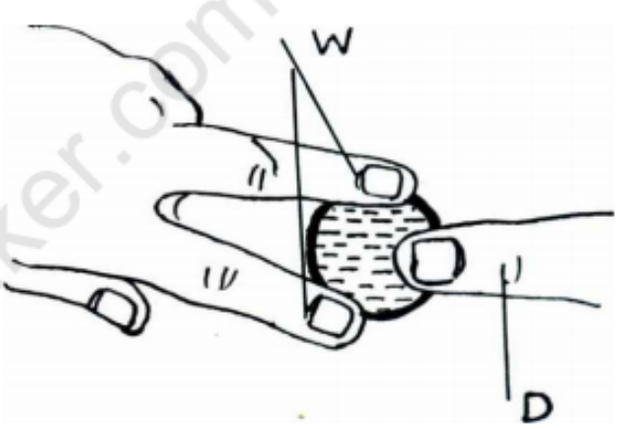
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- A swelling fluctuates, when it contains liquid or gas.
- This test should be carried out by one finger of each hand.
- Sudden pressure is applied on one pole of the swelling. This will increase pressure within the cavity of the swelling and will be transmitted equally at right angles to all parts of its wall. If another finger of the other hand is placed on the opposite pole of the swelling, the finger will be raised passively due to increased pressure within the swelling. This means that the swelling is fluctuating.

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- In the first figure it is shown how a small swelling may be displaced as a whole by the displacing finger (D) and it shifts towards the watching finger (W) to elicit a false sense of fluctuation even when the swelling is a solid one. The second figure is the ***correct method of*** eliciting fluctuation in case of a small swelling. Two fingers of the left hand (watching fingers 'W') are placed on two sides of the swelling and the index finger of the right hand (displacing finger 'D') is pressed on the swelling to displace the fluid within the swelling

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- ***For very large swelling more than one finger of each hand are used. Two or even three fingers*** may be used for providing pressure (displacing fingers) and palmar aspect of four fingers of the other hand may be used to perceive the movement of displaced fluid (watching fingers)
- ***Very soft swellings sometimes yield false positive sense in fluctuation test.*** The swellings which can be included in this list are : lipoma, myxoma, soft fibroma, vascular sarcoma etc.

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- Translucency.— This means that the swelling can transmit light through it. For this, it must contain clear fluid, e.g. water, serum, lymph, plasma or highly refractile fat.
- A swelling may be fluctuant as it contains fluid, but may not be translucent when it contains opaque fluid, such as blood or pultaceous material (dermoid or sebaceous cyst).
- To carry out this test, darkness is essential. In day time, this can be achieved by a roll of paper, which is held on one side of the swelling, while a torch light is held on the other side of the swelling. The swelling will be seen to transmit the light, if it is a translucent swelling.



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- Reducibility.— This means that the swelling reduces and ultimately disappears when it is pressed upon. This is a feature of hernia. Lymph, varix, varicocele, saphena varix, meningocele etc. are also reducible partly or completely.

- Compressibility means the swelling can be compressed, ***but would not be disappeared completely.***

- The most important differentiating feature between a compressible swelling and a reducible swelling is that in case of the latter, the swelling completely disappears as the contents are displaced into the cavities from where they have come out and may not come back until and unless an opposite force, such as coughing or gravity is applied.

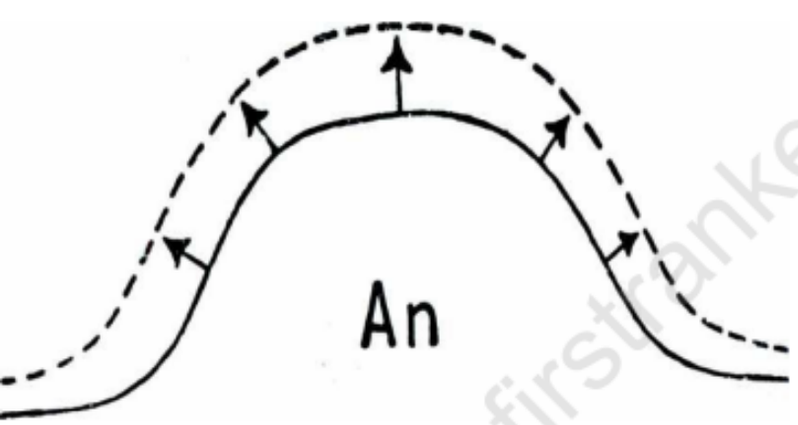
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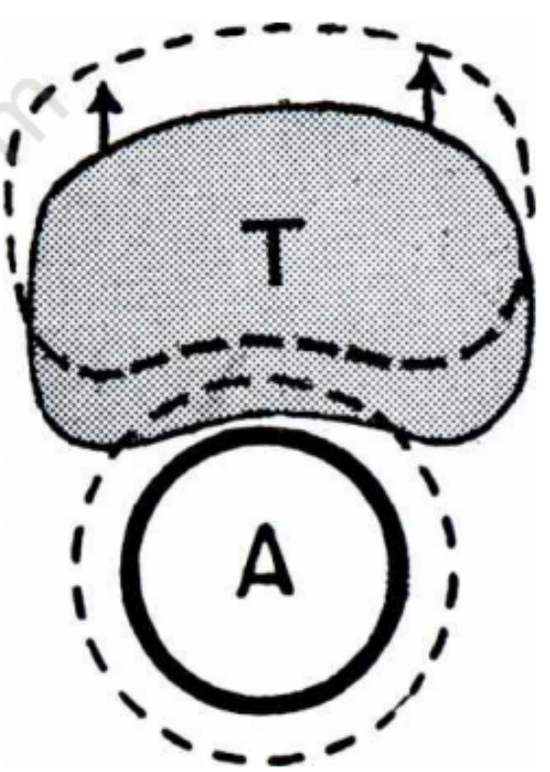
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- Two fingers, one from each hand, are placed on the swelling as far apart as possible . If the two fingers are raised with each throb of the artery, the swelling is a pulsatile one. When the two fingers are ***not only raised, but also separated with each beat of the artery, the pulsation*** is said to be an 'expansile' one.
- When the two fingers are only raised, but ***not separated, the*** pulsation is said to be 'transmitted'.
- In case of pulsatile swelling of the abdomen, the patient is placed in the knee-elbow position to determine whether it is an aneurysm of the abdominal aorta or a tumour lying in front of the abdominal aorta (transmitted pulsation). In case of the latter in this position pulsation ceases.

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- Lymph node examination

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Percussion

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- To find out gaseous content of the swelling.
- Eg: resonant note in hernia.
- Hydatid thrill- 3 fingers test

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- **Auscultation**
- All pulsatile swelling should be auscultated to hear any bruits

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Examination of pressure effect

- 1. Artery –weak distal pulse
- 2. Nerve-muscle wasting
- 3. Bone-erosion

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Investigations

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- ESR – elevated in inflamatory swellings, malignancy, anaemia
- In case of recurrent abscess RBS is important along with urine routine and microscopy
- Aspiration of material (diagnostic/ therapeutic)
- FNAC
- Xray –in bony swellings to rule out bone erosions

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- Ultrasonography-non invasive, non expensive , can comment on solid and cystic nature of swelling
- CT Scan
- MRI
- BIOPSY-(Needle /punch /Open biopsy)
- Open biopsy – excisional and incisional biopsy
- Incisional biopsy can cause spread of tumour

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Difference between benign and malignant swelling

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SYMPTOM	BENIGN	MALIGNANT
DURATION	SLOW GROWTH	RAPID GOWTH
AGE	YOUNGER AGE	>40
PAIN	USUALLY ABSENT	MAY BE PAINFUL
LOSS OF WEIGHT	NEVER SEEN	PRESENT
LOSS OF FUNCTION	NOT SEEN	SEEN QUITE EARLY

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	BENIGN	MALIGNANT
CACHEXIA ,ANAEMIAAND LOSS OF WEIGHT	ABSENT	PRESENT
MOBILITY	FREELY MOBILE	FIXED EARLY
SURFACE	SMOOTH	IRREGULAR
MARGIN	DEFINATE AND SMOOTH	NOT DEFINATE AND IRREGULAR
CONSISTENCY	FIRM	HARD OR VARIABLE CONSISTENCY
PRESSURE EFFECT	ABSENT	PRESENT
REGIONAL LYMPH NODE	NOT ENLARGED	OFTEN ENLARGED
DISTANT METS	ABSENT	MAY BE PRESENT
RECURRRENCE	NEVER RECURES	OFTEN RECURES
SECONDARY CHANGES	NOT SEEN	OFTEN PESENT

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Danger signs

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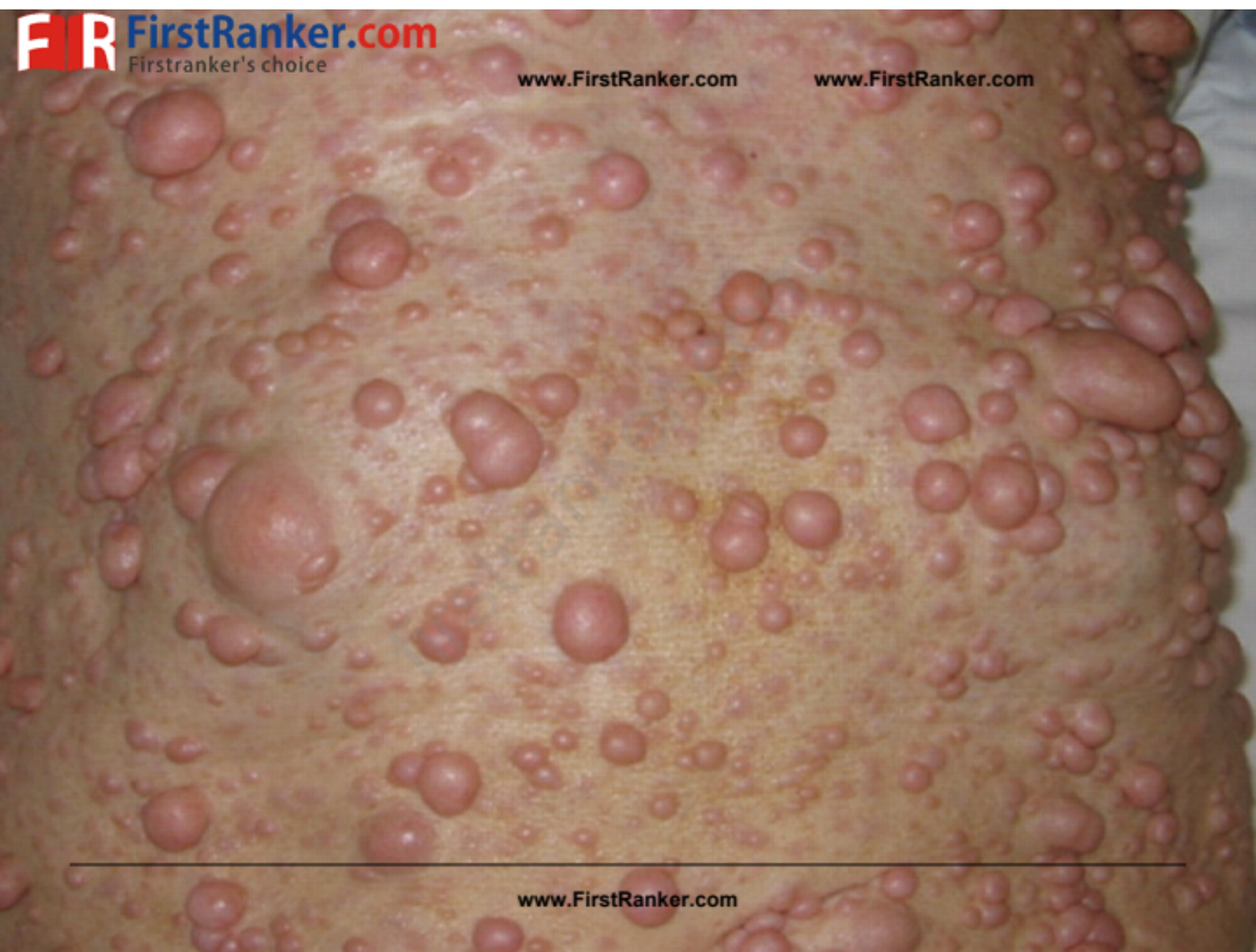
- Sudden increase in size
- Increased vascularity with local rise of temperture
- Fixity to surrounding structures
- Secondary changes –pigmentation /ulceration and bleeding
- Pain
- Enlarges regional lymph nodes

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