Cysts

Aaron Peterson DO
Aspen Dermatology Residency
Spanish Fork, UT
A cyst is a walled off subepidermal cavity filled with keratin, mucin or fluid.

Cutaneous cysts can be classified by anatomic location, embryologic derivation or histologic features.

Three main categories exist for classifying cutaneous cysts histologically:

• Stratified Squamos Epithelium
• Non-Stratified Squamos Epithelium
• Absence of Epithelium
From follicular infundibulum:
- Epidermoid cyst
- Milium
- Pigmented follicular cyst
- Vellus hair cyst

From sebaceous duct:
- Steatocystoma

From outer root sheath:
- Trichilemmal cyst
Cysts containing a stratified squamous epithelium

- Epidermal Inclusion Cyst
- Milium
- Pilar Cyst
- Proliferating Trichilemmal Cyst
- Proliferating EIC
- Vellus Hair Cyst
- Steatocystoma
- Cutaneous Keratocyst
- Pigmented Follicular Cyst
- Dermoid Cyst
- Verrucous Cyst
- Ear Pit Cyst
- Pilonidal Cyst
Epidermal Inclusion Cyst

- Most common cyst, found most commonly on the upper trunk and face.
- Arise from the follicular infundibulum.
- May also arise from traumatically implanted epithelium.
- Some individuals seem to be genetically predisposed and association is documented in:
  - Gardner Syndrome
  - Nevoid Basal Cell Carcinoma Syndrome
  - Pachyonychia Congenita
Epidermal Inclusion Cyst
Epidermal Inclusion Cysts
Essentially just small EICs

Extremely common in children and on the face

Can be seen in widespread distribution in:

- Hereditary Trichodysplasia
  - (Marie-Unna Hypotrichosis)
- Oral-Facial-Digital Syndrome Type 1
- Rombo Syndrome
- Bazex Syndrome
Pilar Cyst

- Much less common than EICs
- 90% occur on the scalp
- Frequently are multiple and inherited as an autosomal dominant trait
- Have also been associated with Pachyonychia Congenita Type 2
Pilar Cyst
Proliferating Trichilemmal Cyst

- Usually found on the scalp of older women
- Can reach sizes of 20 cm or larger
- Are thought to be benign however, at least 30 cases of distant metastases have been reported
Vellus Hair Cyst

- Commonly located on the trunk
- May be inherited in an autosomal dominant fashion
- Can often be eruptive in nature presenting with hundreds of small papules on the chest
- Can also be seen in Pachyonychia Congenita Type 2
Pigmented Follicular Cyst
Can be single or multiple

Dermal cysts that drain oily fluid

Usually found on the chest, axillae and groin

Can be inherited as an autosomal dominant condition called Steatocystoma Multiplex and seen in conjunction with eruptive hair cysts and again in Pachyonychia Congenita
Cutaneous Keratocyst

- Clinically appear similar to EICs and have mainly been observed with Neviloid Basal Cell Carcinoma Syndrome
- Appear similar to a steatocystoma on pathology but without sebaceous lobules
- No granular layer
Dermoid Cyst

- Usually seen in an infant along an embryonic fusion plane with the most common location around the eyes.
- Use caution if excision is desired since these may have connections to the central nervous system.
Dermoid Cyst
Ear Pit Cyst

- A congenital defect in embryologic fusion and epithelial entrapment
- About 1% of population is affected and can be inherited in an autosomal dominant fashion

Associations Include:
- Branchio-otic syndrome
- Branchio-oto-renal dysplasia
- Treacher Collins-Francischetti syndrome
- Goldenhar syndrome
- Lowry-MacLean syndrome
- Cat-eye syndrome
Ear Pit
Pilonidal Cyst

- Usually present as a painful swelling of the upper gluteal cleft or sacrococcygeal area
- Often seen in hairy men
Pilonidal Cyst
Cysts with a Non-Stratified Squamosus Epithelium

- Hidrocystoma
- Bronchogenic Cyst
- Thyroglossal Duct Cyst
- Branchial Cleft Cyst
- Cutaneous Ciliated Cyst
- Ciliated Cyst of the Vulva
- Median Raphe Cyst
- Omphalomesenteric Duct Cyst
Hidrocystoma

- Skin colored to translucent or even blue cysts on the face
- Can be classified as Eccrine or Apocrine and each type behave differently
- Associated with:
  - Ectodermal Dysplasia
  - Schopf-Schulz-Passarge Syndrome
Apocrine Hidrocystoma
Apocrine Hidrocystoma
Eccrine Hidrocystoma
Eccrine Hidrocystoma
Most commonly found in the suprasternal notch at birth

Formed from trapped respiratory epithelium of the trachea during embryologic development
Thyroglossal Duct Cyst

- Seen in young adults or children as a midline cystic nodule on the anterior neck
- Form during development from remnants of the thyroglossal duct
Branchial Cleft Cyst

- Often present in the second or third decades of life
- Occur along the SCM, pre-auricular area, or the mandible
- Thought to be remnants from the brachial cleft
Branchial Cleft Cyst
Occur on lower extremities of young women
Occur on the ventral penis near the glans in young men

Are thought to be remnant urethral epithelium
Median Raphe Cyst
Omphalomesenteric Duct Cyst

- A closure defect of the omphalomesenteric duct which connects the midgut to the yolk sac.
Pseudocysts—Those Without an Epithelial Lining

- Mucocele
- Digital Mucous Cyst
- Ganglion Cyst
- Pseudocyst of the Auricle
- Cutaneous Metaplastic Synovial Cyst
Disruption of the minor salivary gland ducts

Usually on the lower labial mucosa

Accumulation of mucinous material can illicit inflammation and granulation to the area
Mucocele
Digital Mucous Cyst

- Most commonly found on the dorsal distal phalanx of the finger
- Drain clear gelatinous material if punctured
- Usually have an underlying connection to a joint space
- Will often traumatize the nail matrix causing nail changes extending directly distal to the visible cyst
Digital Mucous Cyst
Digital Mucous Cyst
Ganglion

- Large mucinous filled cysts attached to a tendon sheath or joint capsule but not communicating with the joint space
- Mucin is thought to be produced from fibroblasts
- Found on volar wrists, dorsal wrist, fingers, feet or knees
Ganglion
Pseudocyst of the Auricle

- Presents painless swelling of the scaphoid fossa in middle-aged men

- Trauma? or developmental defect?
Pseudocyst of Auricle
Pseudocyst of the Auricle
Cyst
