MANAGEMENT OF SKIN FOLD DISEASES
(REMOVING THOSE UGLY WRINKLES!)

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INTRODUCTION
Skin fold dermatitis (intertrigo) is an inflammatory condition associated with a superficial pyoderma. This results from abnormal surface-to-surface contact of skin folds and/or mucous membranes. The skin folding may be congenital (a feature of the breed) or acquired through obesity or ageing.

The skin surface usually has infrequent opportunity for contact with adjacent areas. Overlapping of the skin results in a number of changes in the local environment including physical abrasion, increase in temperature, lack of ventilation, and an abnormal accumulation of skin secretions. The lack of ventilation on the skin prevents normal evaporation and permits accumulation of skin debris, moisture, and body secretions. Excessive accumulation of sebaceous material provides a favorable environment for skin bacteria to proliferate and produce breakdown products which cause skin fold dermatitis. The organisms usually implicated are usually Staphylococcus, Streptococcus, Pseudomonas and yeast such as Malassezia and Candida.

The most commonly affected sites for skin fold disease are facial folds, temporal folds, tail folds, vulvar folds, lip folds. Irrespective of location, skin fold disease is characterized by erythema, exudation, and malodor.

Many patients with skin fold dermatitis can be treated medically. The principles of medical therapy are removal of the hair from the skin fold site, the removal of the sebaceous secretion moisture with shampoos, and application of antiseptic products (chlorhexidine or povidone iodine). Astringents such as Burrows solution can be combined with topical steroid preparations to dry the area and reduce inflammation. Systemic antibiotics along with steroids may be used in severe cases to reduce infection and inflammation prior to surgical correction. Recurrent and progressive lesions are best treated surgically.

The goal of surgery is to ablate the skin fold and permanently correct the abnormal environment. The skin fold may be a requirement of some breeds and clients should be informed of this before surgery is scheduled. Medical management for 7-10 days prior to surgery is recommended. Fold areas are prepared for surgery by clipping all hair and a thorough surgical scrub to remove the abnormal accumulation of pathogenic bacteria. All surgical sites should be considered as contaminated and perioperative antibiotics (cephazolin, 20 mg/kg) should be administered.

The dimensions of the fold are determined and the entire skin fold is excised. Large amounts of dead space may be created with the surgical excision and should be managed either with subcutaneous suture closure or with the use of closed-suction wound drains. Intradermal sutures may be used in place of skin sutures where skin sutures would be difficult to remove. Postoperative analgesics should be administered to include narcotics in the immediate postoperative phase followed by NSAIDs for an additional 4-5 days. It may be necessary to prevent self-induced trauma with the use of Elizabethan collars until the wound has healed.

NASAL FOLD.
Excessive nasal folds are associated with brachycephalic breeds. The condition is most commonly seen in English and French Bulldogs, Pekingese, Boston Terriers, Pugs, and Persian cats and are often a breed requirement. This disease presents as excessive skin folds over the bridge of the nose with resulting dermatitis. These folds may also cause corneal ulcers by direct abrasion of the eye. Concurrent epiphora may cause moisture to accumulate within the fold intensifying the problem.

Patient is positioned in sternal recumbency with the head elevated on a pillow, the eyes protected with ophthalmic ointment and the folds and surrounding area are surgically prepared. The excessive skin is determined by elevating the skin folds and the area to be removed is marked with a sterile surgical marker. It is essential not to remove excessive skin which could result in dehiscence of the wound or ectropion. An elliptical incision is made around the excessive folds over the bridge of the nose (or bilaterally on each side of the nose in some breeds) and the skin removed by careful dissection. Deep dissection in this area could result in damage to branches of the facial nerve or blood vessels at the medial canthus. The subcutaneous tissues are closed with absorbable sutures and the skin closed with either skin sutures or an intradermal pattern.

LIP FOLD
Dermatitis associated with excessive lip tissues is seen in Spaniels, Retrievers, Setters, Saint Bernards, Newfoundland, and Bloodhounds. The fold is located at the caudal margin of the lower lip between the canine and molar teeth. The inflammation and infection results from a trapping of saliva and food fragments within the lip fold.

The patient is positioned in lateral recumbency and the area for excision is identified and marked with a sterile surgical marker. An elliptical incision is made surrounding the fold through the skin but not through the underlying musculature and mucous membrane. The skin fold is gently elevated and the underlying skin excised with careful attention to controlling hemorrhage. This is done by fine-point electrocautery. The defect is closed with subcutaneous sutures and the skin closed with sutures or an intradermal suture pattern. The disease is always bilateral and both sides are corrected at the same time.

TEMPORAL FOLD
This disease occurs almost exclusively in the Shar Pei breed. These are large skin folds over the temporal area (above the dorsal eyelids) and result not only in skin fold dermatitis but also in entropion. Repair of the entropion by conventional surgery will often not be successful until these folds are excised.

The dimensions of the folds are identified prior to surgery and the amount of skin to be removed is predetermined by an amount sufficient to reduce the tendency for entropion. The dimensions of the folds are marked prior to surgical excision. This surgery often requires removal of the folds bilaterally above the dorsal eyelids rather than by a continuous incision across the entire area of both upper eyelids. The skin fold is excised, carefully elevated, and hemorrhage is controlled. Deep dissection may damage the auriculopalpebral nerve. The wound is closed with subcutaneous absorbable sutures and the skin closed with skin sutures or with carefully placed intradermal suturing.
TAIL FOLD
Redundant skin folds around the base of the tail are common in the Bulldog, Boston Terrier, and Pugs. The condition is often termed “corkscrew” or “ingrown tail” because of the tendency of the cervical vertebrae to ankylose and deviate ventrally. The ventral deviation of the coccygeal vertebra results in a deep pocket with skin folds around and below the ingrown tail. The pyoderma that results can be extreme and complicated by self-trauma.

Resection of the tail and surrounding skin is performed with the patient in sternal recumbency. A purse string suture is placed in the anal opening and the perineal area is surgically prepared. Elliptical incisions are made around the tail starting near the sacrum and ending just dorsal to the anal opening. The incision is carried deep through the subcutaneous tissue and ventrally around the ankylosed coccygeal vertebra. The tail is elevated by excising the coccygeus muscle and blunt dissection is used to isolate the coccygeal vertebra from the surrounding tissue. The vertebra are dissected until they are totally exposed and bone cutters used to bisect the most cranial normal coccygeal vertebra. Deep dissection is avoided since the ingrown tail may be against the rectum. Bleeding from the coccygeal artery is controlled by ligation or electrocautery.

A large pocket created by removal of the tail may necessitate a closed suction wound drain being placed for 2-3 days. The deep pocket created by excision of the ingrown tail is closed with absorbable sutures and the skin by conventional closure.

VULVAR FOLD
Skin folds around the dorsal and lateral aspects of the vulva are usually an acquired disease of older, obese dogs. This is often accompanied by a hypoplastic vulva, especially when ovariohysterectomy is performed on very young females with the external genitalia becoming recessed within the surrounding perineal tissue. The vulvar fold permits the perivulvar accumulation of dermal secretions and urine which promotes not only skin infection but also recurrent urinary tract infections.

Resection of the vulvar fold (episioplasty) is done with the patient in sternal recumbency and the perineal region elevated on the end of the operating table. The tail is retracted cranially and a purse string suture placed in the anal opening. The depth of the skin fold is assessed by retraction of the skin and the appropriate amount of skin to be removed is marked with a surgical marker. A “horse shoe” or “crescent-shaped” area of skin is resected around the dorsal and lateral aspects of the vulva. The first incision is made 1-2 cm away from the vulva and the second incision is made more lateral and dorsal. The amount of skin to be removed can be estimated by extracting the recessed vulva prior to making the second incision. Simple interrupted sutures are placed between the two incisions at the 9, 12 and 3 o’clock positions to determine if an adequate amount of skin has been removed. If the correction appears to be adequate, subcutaneous sutures are placed and the skin closed in routine fashion.

After care usually consists of protecting the surgical site from self-trauma with the use of an Elizabethan collar. Removal of any drains usually occurs at the second or third day. The skin sutures are left in place for fourteen days in order to insure adequate healing before they are removed. The owners are usually advised to control the animal’s weight in order to avoid additional skin fold problems that can often be exacerbated in the obese patient.

REFERENCES