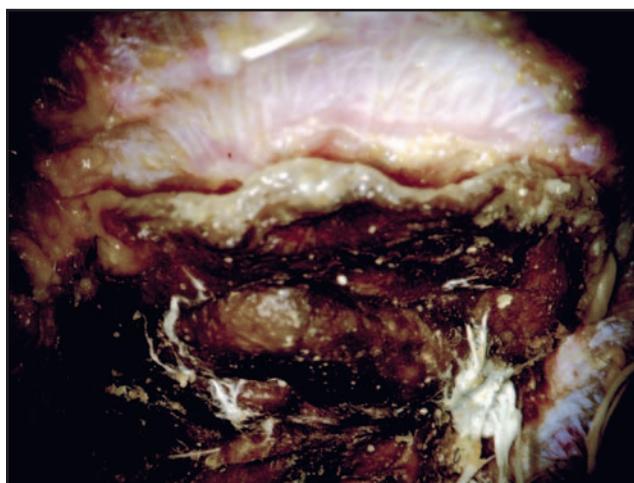
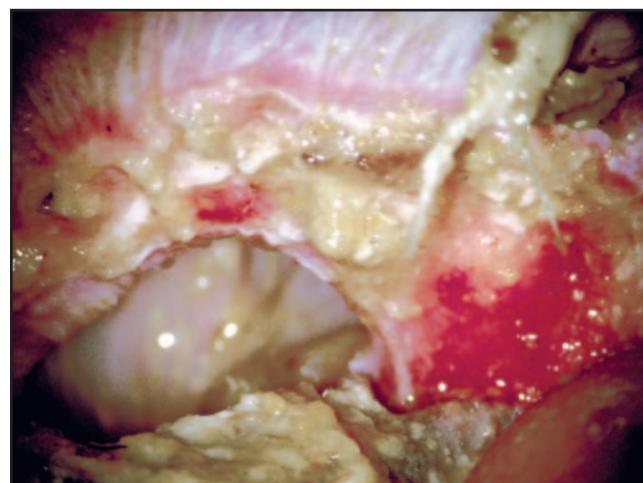


**Crop Burn Repair – Step by Step Figs 35.20a-e**

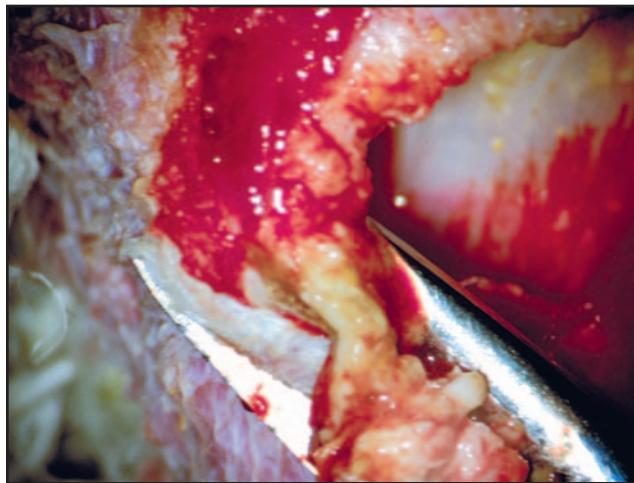
Greg J. Harrison

**Fig 35.20a** | A severe crop burn that has been allowed several days to granulate. With the initial edema gone, the tissue layers can be more easily identified and separated for repair (6x).



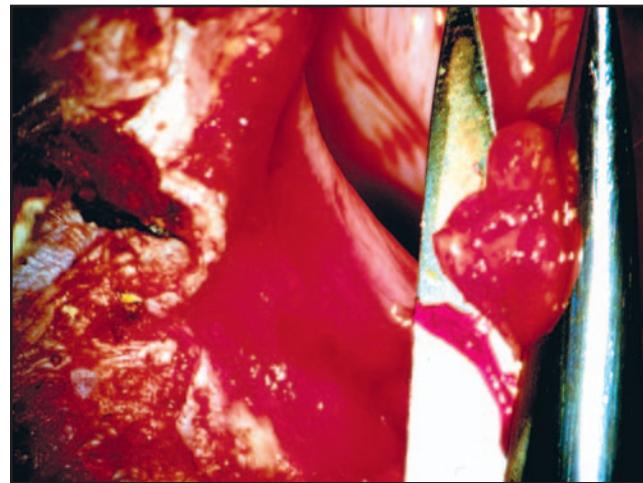
Greg J. Harrison

**Fig 35.20b** | The necrotic skin and the anterior wall of the crop have been removed in the scab (6x).



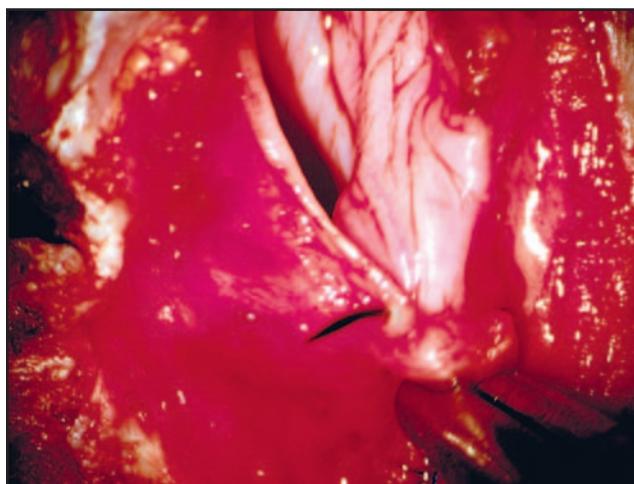
Greg J. Harrison

**Fig 35.20c** | Scissors are used to cut the granulated union of the skin and the crop into separate layers (6x).



Greg J. Harrison

**Fig 35.20d** | Trimming of devitalized or granulated tissue (6x).



Greg J. Harrison

**Fig 35.20e** | A simple interrupted inverting suture pattern is used to close the crop (6x).

to collect nerve tissue that typically can be found in close proximity to blood vessels. Closure of the crop is accomplished with a simple continuous pattern oversewn with an inverting pattern with an absorbable monofilament suture on an atraumatic needle. Skin closure is routine (Figs 35.21a-h).<sup>22,25,57</sup>

## ESOPHAGEAL STRicture CORRECTION

Esophageal strictures may develop as a result of previous infection (trichomoniasis, capillariasis, candidiasis), trauma from tube-feeding, thermal or caustic burns, ingestion of a foreign body or secondary to iatrogenic surgical trauma. Therefore, once an esophageal stricture is diagnosed, the underlying etiology must be determined and addressed. It may be necessary to place a pharyngostomy tube for alimentation. The stricture may be resolved by passing a series of tubes of increasing diameter through the oral cavity and esophagus past the stricture over a period of several weeks.<sup>25</sup>

## CELIOTOMY

There are several surgical approaches to the avian coelom. These include the left lateral, right lateral, ventral midline, and cranial, mid and caudal transverse approaches. Skin incisions vary with the surgical procedure and amount of coelomic exposure required. The surgeon should evaluate the skin and subcutaneous tissues overlying the surgical site for any sign of trauma, fatty infiltration, infection and necrosis. The surgical approach should maximize exposure of the coelomic organs, but minimize the involvement of diseased skin and subcutaneous tissues. For any celiotomy, the cranial part of the patient should be elevated between 30 to 40° to prevent fluids used for irrigation, or coelomic fluid,

from flowing craniad and entering the respiratory tract following penetration of the air sacs. If coelomic fluid is present, as much should be aspirated as possible or surgery delayed until the fluid is resorbed. If coelomic fluid is aspirated while the patient is anesthetized, it may be necessary to adjust the vaporizer setting as the air sacs are allowed to completely expand and anesthetic gas concentration increases.<sup>1,9</sup>

The left lateral celiotomy provides the best exposure to the proventriculus, ventriculus, female reproductive tract, left testicle, spleen, left kidney and the left ureter. The patient is placed in right lateral recumbency and the site surgically prepped. The caudodorsal border of the sternum is palpated, and the pelvic bones including the cranial pubis are identified. The left leg may be retracted caudally, creating a fold from the knee to the lateral margin of the sternum (knee web) to increase exposure to the cranial coelom (Figs 35.22a-h). Alternatively, the leg may be retracted cranially to increase surgical exposure to the caudal coelom (Figs 35.22i-p). Lung tissue can be visualized percutaneously between the fifth through seventh ribs in smaller birds. The *latissimus dorsi* and *iliotibialis cranialis* muscles obscure visualization of lung tissue in larger species. The skin is incised using monopolar or bipolar radiosurgery or with a laser from the cranial to caudal left paralumbar region. At the cranial edge of the knee web, just caudal to the last rib, the incision is continued caudoventrally to pass through the groove of the groin web to the region of the pubic bone. Once the skin incision is complete, the left leg may be further retracted caudodorsally to expose the abdominal wall. A branch of the superficial medial femoral artery and vein, visible passing over the lumbar fossa toward the pubis, should be cauterized. The abdominal wall incision is initiated in the external abdominal oblique

### Ingluviotomy – Step by Step Fig 35.21a-h



Greg J. Harrison

**Fig 35.21a** | Cadaver showing a cotton-tipped applicator coming up the esophagus into the crop and the delicate nature and transparency of the crop's tissues.



Espen Odberg

**Fig 35.21b** | Distended crops may occur with primary disorders or lower gastrointestinal dysfunction.



Espen Odborg

**Fig 35.21c** | An incision is made through the skin over the crop using a monopolar or bipolar radiosurgery unit or a laser.



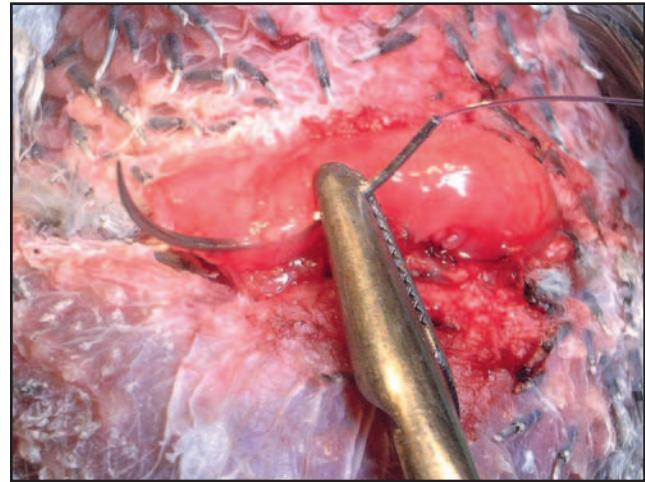
Espen Odborg

**Fig 35.21d** | The crop has been incised in this picture revealing a large amount of seed and other material within the crop lumen.



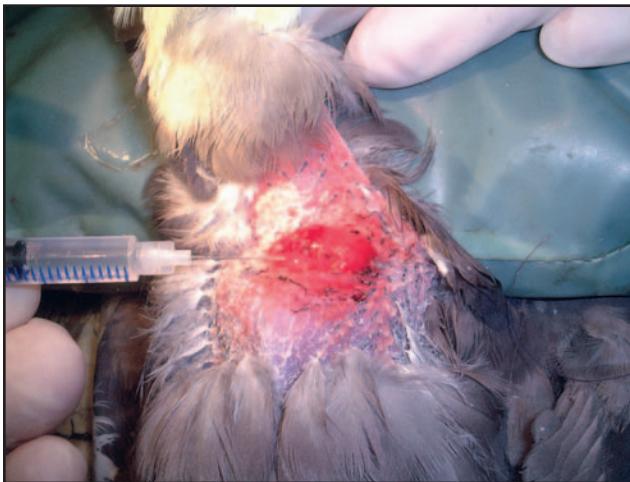
Espen Odborg

**Fig 35.21e** | The seed and fibrous foreign material present within the crop have been removed. Fibers from a rug had formed a matrix for a bezoar in this bird.



Espen Odborg

**Fig 35.21f** | Closure of the crop is performed with an interrupted suture pattern using an absorbable monofilament suture and an atraumatic needle. The needle pictured here is a cutting needle (vs an atraumatic needle) and is very large for use in the crop, thus increasing the risk of trauma and tearing of the tissues.



Espen Odborg

**Fig 35.21g** | Once the incision is closed, saline should be injected into the crop, as pictured, or infused via gavage tube in order to identify any areas that are not completely sealed. If leaks are noted, additional sutures should be placed and the patency checked again. It is important to aspirate the fluid from the crop and keep the head elevated to prevent aspiration during anesthesia recovery.



Espen Odborg

**Fig 35.21h** | Skin closure after an ingluviotomy.

**Left Lateral Celiotomy – Step by Step Figs 35.22a-p**

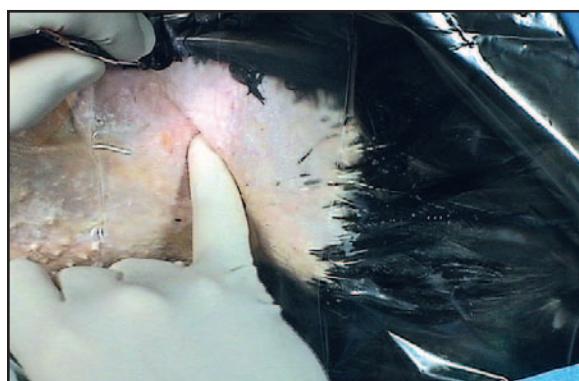
Scott Echols

**Fig 35.22a** | Left lateral celiotomy with the left leg retracted caudally is the best approach for hysterectomy, ovary, adrenal, anterior kidney or testicular investigations.



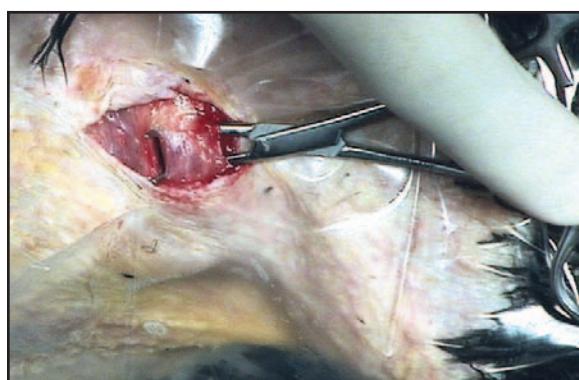
Scott Echols

**Fig 35.22b** | Site is plucked, surgically prepared and draped.



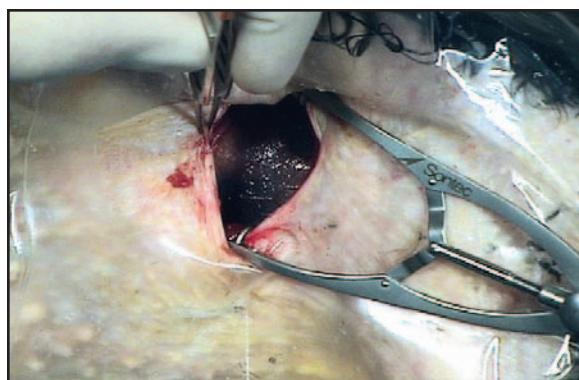
Scott Echols

**Fig 35.22c** | Close-up view of draped site.



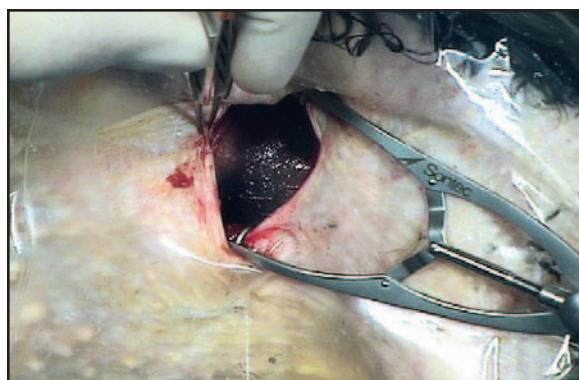
Scott Echols

**Fig 35.22d** | Finger identifying the anterior border of the iliobibialis cranialis muscle, just caudal to the last rib. This is the paralumbar fossa.



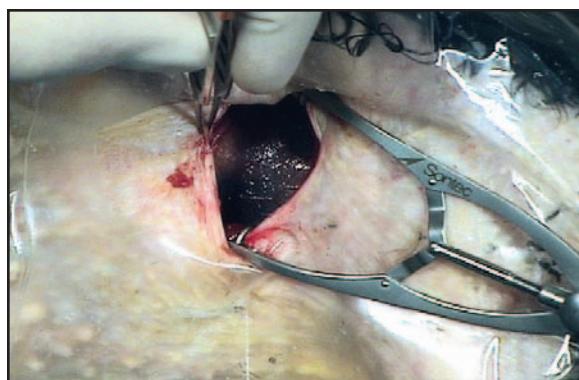
Scott Echols

**Fig 35.22e** | The incision is made in the middle of the paralumbar fossa.



Scott Echols

**Fig 35.22f** | The last rib is identified and elevated.



Scott Echols



Scott Echols

**Fig 35.22g** | The last two ribs are transected.

**Fig 35.22h** | A retractor is in place to maximize visualization.



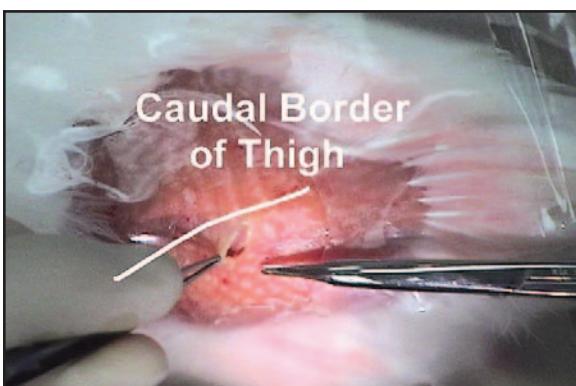
Scott Echols

**Fig 35.22i** | Left lateral celiotomy with the left leg pulled anterior. This allows the ideal approach for the proventriculus, ventriculus, spleen, liver and caudal intestine tissues for surgical exploration.



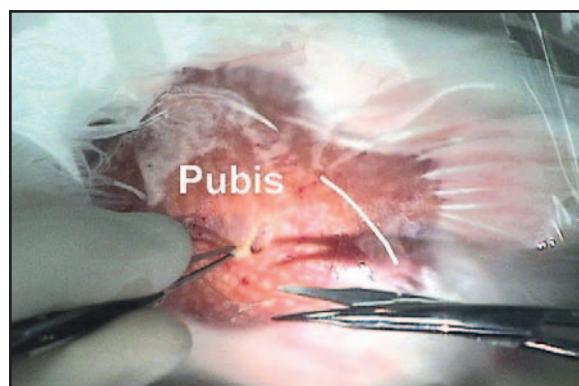
Scott Echols

**Fig 35.22j** | Area plucked free of feathers.



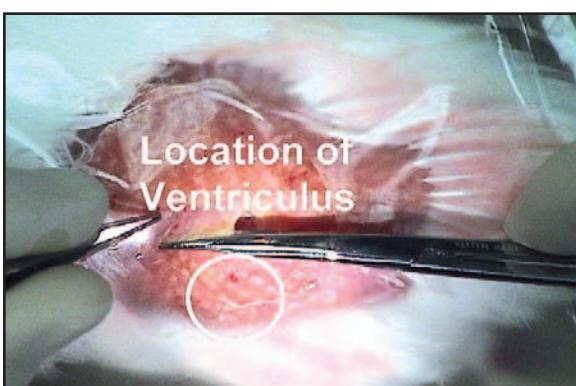
Scott Echols

**Fig 35.22k** | Site of entry and associated structure locations.



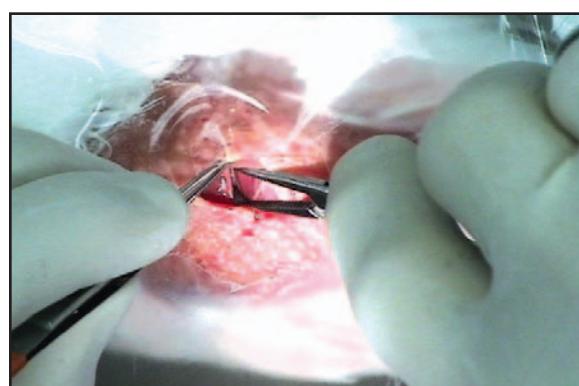
Scott Echols

**Fig 35.22l** | Site of entry and associated structure locations.



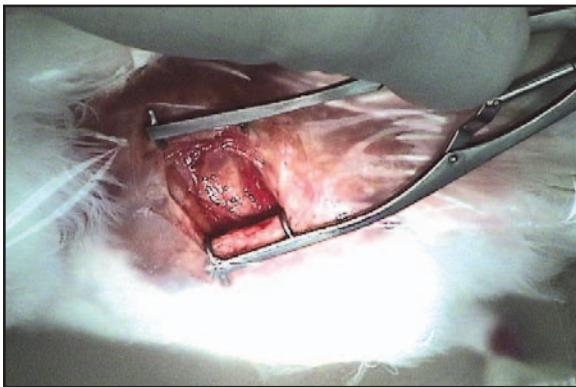
Scott Echols

**Fig 35.22m** | Site of entry and associated structure locations.



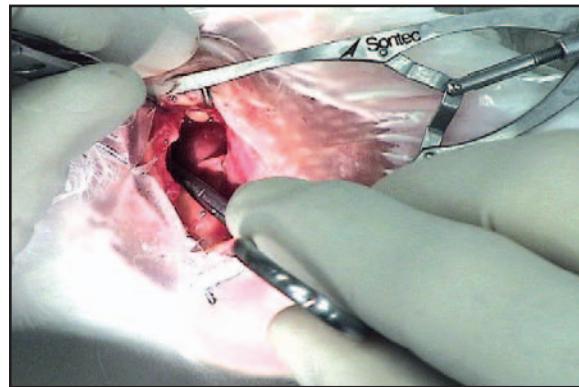
Scott Echols

**Fig 35.22n** | Skin incision and identification of caudal thigh muscle allows safe entry into the coelom without invading coelomic organs or tissues.



Scott Echols

**Fig 35.22o** | Retractor in place.



Scott Echols

**Fig 35.22p** | Exploration of the coelom anterior to the ventriculus.