

## **ILLUSTRATIVE CASE HISTORIES OF WILDLIFE VETERINARY MANAGEMENT**

DR HOWARD RALPH

BVSc (Hons), MBBS (Hons), MVS (Wildlife Medicine),

JCCA Accred (Anaesthesia), A/Dip Fine Arts, Dip TESL,

Cert Ed NSW, Clinical Forensic M O

### **UROLITHIASIS IN EASTERN GREY KANGAROOS**

Urolithiasis, or presence of crystals in the urine, may present as an asymptomatic incidental finding on routine urinalysis or with clinical dysuria or complete urethral obstruction. In the six clinical cases seen by our service in the past two years, three initially had dysuria and three were completely obstructed. One of those with dysuria progressed rapidly to complete obstruction.

All patients were young between 5kg and 9kg body wt.. All were being fed Wombaroo milk formula. All were previously well.

Those with dysuria presented because the carer noted apparent abdominal discomfort, disinclination to feed, discomfort on micturition. On examination they were afebrile, had palpable pelvic discomfort and enlarged bladder, staining around the cloaca and present bowel sounds. Urinalysis revealed heavy microscopic crystalluria and biochemical changes of high pH (9 +), small blood, small protein, leucocytes +ve, SG 1035, no ketones, bilirubin, nitrate, or glucose. As urine was still flowing treatment included vitamin C, antibiotics, Buscopan and increased water intake. Two patients improved over the subsequent two days with increased urine flow, less discomfort and clinical dysuria, lower urine pH (7 – 7.5), reduced microscopic crystalluria and more normal behaviour. One patient progressed, over the subsequent few hours, to complete obstruction.

Complete urinary tract obstruction is a life threatening medical/surgical emergency. Patients present with distress, signs of

abdominal discomfort such as inability to sit quietly, agitation, standing in a hunched manner or rolling, clawing at the abdomen and anuria. Examination reveals abdominal/pelvic pain on palpation, an enlarged/ tense bladder, brick red or pale mucous membranes, increased or decreased bowel sounds, elevated body temperature, tachycardia then bradycardia, panting ventilation and eventually collapse, cardiovascular shock and death. Urgent treatment is required and involves;

### **Analgesia/anaesthesia**

Intravenous cannulation

Suprapubic catheterization

Attempted urethral catheterization

Urinalysis

Parenteral fluid therapy

Antibiotic treatment (intravenous)

If urethral catheterization is not possible then surgical perineal urethrostomy.

Perineal urethrostomy was required in all patients with complete obstruction and inability to pass a urethral catheter. The operation may proceed immediately if the patient is well enough or may be delayed for a few hours to improve their physiological state. The suprapubic catheter remains in situ during the preoperative phase, urine flow and biochemistry are monitored, fluid therapy, antibiotics, analgesia, sedation and other treatments are given.

For operation, general anaesthesia endotracheal intubation, intravenous therapy, full physiological monitoring (SpO<sub>2</sub>, PR, RR, ETCO<sub>2</sub>, temperature), warming and IPPV are provided.

Urethrostomy is performed proximal to the distal urethral obstruction and the urethra secured to the surrounding soft tissue

providing as large as possible external os. Patency of the whole flow tract is ensured and the bladder flushed to remove any residual urine, crystals, blood, white cells and debris. An indwelling catheter is placed and left in situ, to ensure continued urine output, for about 48 hours. Antibiotics, analgesia, vitamin C and fluid therapy are continued. Gentle cleaning of the operative site may be necessary when the catheter is removed.

If the perineal urethra is elusive then a laparotomy and cystotomy may be necessary. Then the urethra may be catheterized from the proximal internal os and urethrostomy proceed. Closure of the cystotomy and laparotomy are routine.

If there is any doubt about post operative urethral patency then a suprapubic catheter may be left in situ temporarily.

Recovery is rapid. As the obstruction has been relieved, patients feel well enough to behave normally except for some post operative urethral irritation. After the catheters are removed, patients seem well and display normal behaviour. In the longer term post operatively all patients are well, passing urine freely with no apparent discomfort and no recurrence of clinical signs.

## **EXCISION ARTHROPLASTY IN A CRESTED PIGEON**

A crested pigeon was presented unable to properly perch because one leg was in a fixed flexion position.

On examination the bird was thin but otherwise well except for the extended leg. The affected leg was in a fixed flexed state from the hip joint that was poorly mobile with a minimal range of movement possible. Radiographs confirmed a lesion at the coxofemoral joint with osteophytic encroachment of the femoral head on the acetabulum.

Under general anaesthesia with endotracheal intubation, fluid therapy, warming and clinical monitoring an excision arthroplasty

was performed using a posterior approach. Mobility of the coxofemoral joint was ensured prior to routine primary closure.

Post operative improvement was rapid with the bird being able to perch within a few hours of recovery. There were no complications in the longer term.

## **COMPOUND FRACTURE OF THE SKULL IN BLUE TONGUED SKINKS**

Motor vehicle trauma is common in blue tongued skinks. Injuries range from fatal to various major or less severe types. One frequent presentation is facial and skull fracture. Often both are seen together and involve maxilla, mandible, orbital structures and skull bones. When the skull is fractured the orbits may be concomitant and the fracture is often compound and depressed.

Assessment should include the eyes not just the orbital bones. Frequently the bones are disrupted but the eyes and the brain are intact. That means that once the fractures are healed then the patient may be fully functional.

Repair of compound fracture of the skull involves initial assessment, analgesia, antibiotic cover and resuscitation. Definitive repair of the skull fracture may then follow. A depressed fracture is often present and shall require elevation. Radiographs help to further define the extent of the injury.

Under general anaesthetic with intubation, IPPV, fluid therapy and warmth, debridement of the injury may be affected to provide a clean environment for further management. It is mandatory that any contaminants in the wound are removed and that the area is cleaned with solution that is non toxic to the brain. Bone and skin fragments are removed unless the tissue is large, has a blood supply and is able to be incorporated in the repair. The fracture is reduced (elevated), ensuring that no pressure is transferred to the brain during the

process. Fine sterile pins are used to elevate the mobile fragment and then stabilize the fracture site by using the pins as a bridge across the defect. The pins are then secured with tape or 'steristrips' and a dressing applied.

Aftercare involves antibiotic treatment with regular dressing changes that may require a general anaesthetic.

Healing takes place in a number of weeks and the patient is able to eat and mobilize during that time. The pins are then removed and soon thereafter the patient may return to the wild.

## **MANDIBULAR REALIGNMENT TO TREAT ORAL MALOCCLUSION**

Malocclusion is seen in all species and may result from previous fracture, osteomyelitis, neoplasia or congenital abnormal growth. The deformity may affect upper and/or lower components of the mouth, and, depending on the cause will result in lateral or dorsoventral aberration. Some abnormalities respond to minimal interference and corrective devices. If the deformity is more severe operative intervention is necessary.

This report involves a 6kg body wt. Eastern Grey Kangaroo that developed a deformity of the horizontal rami of the mandible causing inability to close the rostral part of the mouth. Eating solids/grass was not possible and the joey was maintained on oral supplemental feeding until old enough to undergo a suitable operation. Clinical diagnosis was apparent but radiographs helped to define the extent and main origin of the deformity.

Anaesthesia was routine with adequate premedication for sedation and analgesia. Intravenous access was established with a 20g cannula in the tail. Induction with propofol, endotracheal intubation, maintenance with isoflurane and oxygen, full physiological

monitoring, intravenous fluids, antibiotics and analgesia, warming and supplemental ventilation (IPPV) are routine.

The operation is performed with the patient in dorsal recumbency. Bilateral mandibular osteotomies are performed and realignment of the mandibular rami assessed to enable proper occlusion of the incisor teeth both laterally and dorsoventrally. The osteotomies are performed in such a manner as to allow as much as possible of the mental nerve function to remain intact. Surgical grade pins are then inserted bilaterally to maintain the reduction. Skin and soft tissue closure is routine. Sterile caps are applied to the external protruding parts of the pins.

Post operatively the patient is maintained on parenteral fluid, antibiotics and analgesia for several days until comfortable enough to recommence oral fluids. General wound toilet is maintained to keep the area as clean as possible without causing pain and discouraging the patient from using the mouth. The pins are removed in 6 weeks following assessment to ensure stability at the operative site.

The joey began eating grass a week after the operation and seemed quite comfortable at that stage. He continued to progress well and removal of the pins under general anaesthesia did not interfere with his progress. He is currently well and growing normally.

**DR HOWARD RALPH** BVSc (Hons), MBBS (Hons), MVS (Wildlife Medicine),

Dip TESL, JCCA Accred (Anaesth), A/Dip Fine Arts, Cert Ed NSW  
Clinical Forensic Medical Officer

1962 – 63      Attended the AUSTRALIAN SCHOOL OF PACIFIC  
ADMINISTRATION

1963 – 66      Worked as an EDUCATION OFFICER in PAPUA NEW  
GUINEA.

Included teaching, tropical health, agricultural projects,  
local government and community welfare. Highland area  
patrols for census and health management

- 1967 – 71 UNIVERSITY of SYDNEY Graduated BVSc with honours and University medal
- 1972 – 74 PRIVATE VETERINARY PRACTICE and WILDLIFE RESCUES
- 1975 – 79 UNIVERSITY of NSW Graduated MBBS with honours
- 1980 – 2007 MEDICAL, VETERINARY PRACTICE and WILDLIFE RESCUES in AUSTRALIA, SOUTH AFRICA, BORNEO and INDONESIA (consultancy to Government of Jakarta to build/refurbish a wildlife hospital, upgrade anaesthetic services and advise on animal welfare). BORNEO Relief anaesthetist and teaching anaesthesia
- 1983 – 92 PART TIME DIRECTOR EMERGENCY DEPARTMENT at MONA VALE HOSPITAL
- 1992 – 93 UNIV of SYDNEY/TARONGA ZOO Scholarship to study wildlife medicine and research oxygen transport during wildlife anaesthesia. Graduated MVS (wildlife Medicine)
- 1988 – 89 A/DIP FINE ARTS (Distinction and college medal)
- 1992 – 94 LECTURES at TAFE, University of Sydney, Macquarie University, Post Graduate Foundation in Veterinary Science and to numerous wildlife rescue and care groups.
- 2002 – 07 REGISTRAR in ANAESTHETICS Calvary Hospital BATEMANS BAY/MORUYA HOSPITALS VMO in ANAESTHETICS and EMERGENCY WILDLIFE CLINIC NSW SOUTH COAST/RESCUES/LECTURES IFAW AWARD for animal welfare and wildlife care Establish SOUTHERN CROSS WILDLIFE CARE

## TEACHING, LECTURES,

SEMINARS in pain management, burns management, anaesthetics, wound management, first aid orphan care first response protocols fluid management, fractures, wildlife health & disease, rescue and rehabilitation medications

2007 – 10

SEMINARS/CONFERENCES

TEACHING TAFE and University Veterinary students

RESCUES/TREATMENT of wildlife: attend fires in Victoria

TRAINING COURSES Australia wide

Develop SOUTHERN CROSS WILDLIFE CARE AND REFERRAL CENTRE

2008

IFAW Emergency Response Training lecturer

2010

TAFE Teaching Animal Care Course

PITTWATER COUNCIL VOLUNTEERS AWARD

Attend flood and cyclone disasters in QLD

Attend bushfires in Coonabarabran

NSW Government volunteer award

Contribute to various publications on conservation, animal welfare wildlife

Study clinical forensic medicine → appointed CFMO

MENTORING Veterinary nurses, Veterinary surgeons, Veterinary nurse students, Medical students

EMERGENCY work in Kathmandu, Nepal

2011 - 14

WILDLIFE RESCUE AND TREATMENT NSW

WILDLIFE TRAINING courses: NSW, WA, VIC

NSW SENIOR VOLUNTEER AWARD 2013

EMERGENCY work Kathmandu, Nepal

AUSTRALIAN of the YEAR Finalist – Local Hero category

Publications Face Of Extraordinary: Volunteers

Animal Abuse

Consultant to Fraser Island Group Development of Wildlife Care Centre



Emergency wildlife translocation

TAFE Teaching Animal Care Course

PATRON Kangaroo Orphanage

Continued development of SOUTHERN CROSS WILDLIFE CARE

Bushfires southern NSW

On line CONSULTANCY to Veterinarians, Veterinary Nurses, Wildlife carers and rescuers

Medical practice