Postoperative care of Patient and Client in the Small Animal Orthopaedic Case

Ronan Doyle MVB CertSAS MRCVS DipECVS
European and RCVS Specialist in Small Animal Surgery
Davies Veterinary Specialists, Hertfordshire, UK
rsd@vetspecialists.co.uk

Introduction
The veterinary nursing role in the small animal orthopaedic case is vital in the successful management of the problem, both in supporting and treating the patient and ensuring effective client compliance. The importance of effective postoperative client compliance cannot be overstressed and is as essential as the original surgery. Maintaining a high standard of postoperative care for the animal should meet the client’s expectations of an uneventful recovery. Significant client care is usually required, and with reassurance and support during this sometimes lengthy period good compliance is ensured. Also should difficulties develop, these can be rapidly picked up by client and veterinary professional, and steps can be quickly taken to resolve them.

Immediate postoperative care

Bandages
• Reasons for bandaging
  o Support ➔ to support fractures, dislocations, sprains or strains
  o Protection ➔ protection of wounds from contamination and further trauma, absorption of exudates
  o Pressure ➔ to arrest haemorrhage and control swelling
  o Immobilisation ➔ to restrict movement at a fracture site / of an injured joint.
• Types of dressing
  o Adhesive nonadherent wound dressing
  o Light padded dressing
  o Heavy padded layered dressing e.g. Robert Jones dressing
  o Splinted dressing
  o Cast
  o Specialised dressings – Velpeau sling for forelimb; Ehmer sling for hip luxation; Thomas splint etc.
  o Protective dressings – management of potential pressure points in the recumbent or thin patient

• Layers of dressing
  o Primary dressing: Dependent on whether there is an open wound that requires management or a closed wound that just requires a non-adherent dressing
  o Padding materials: To support and cushion the area bandaged, and absorb exudates. Examples: Cotton wool, Soffban, Foam etc.
  o Internal wraps – conforming open weave bandage that applies pressure and helps secure layers of padding. Examples Knitfix, Easifix
  o External wraps – secure outside protective layer – Examples: vetwrap, elastoplast, surgifix, T-shirt etc.

• Care of the bandage
  o The dressing must not be allowed to become wet or soiled
  o Chewing at the bandage should be discouraged, eg consider Elizabethan collar, muzzle, application of foul tasting substance, sedation, however excessive chewing could be a sign of discomfort due to the bandage
  o Evidence of odour, oedema, discharge or skin irritation should prompt bandage changing.
  o Slippage of the bandage from its original position requires attention
  o Evidence of general signs of illness – depression, lethargy, lack of appetite
  o Owners need to be well aware of what to expect and of these signs to monitor the bandage. This advice is best given as verbal and reiterated as clear written instructions.
  o Follow-up telephone conversations over the next day(s) are useful at ensuring compliance and reassuring the client.
  o Missed appointments for bandage changes MUST be followed up.
When rechecking/changing a bandage always fully remove it and change all materials to prevent buildup of discharge and fully assess the limb.

Physiotherapy

- Prolonged immobilisation after joint surgery is closely associated with degenerative alterations in connective tissue, cartilage, ligaments, muscles and bone-ligament complexes while allowing for hypertrophy of periarticular fibrous tissue.
- Alternatively early motion and aggressive post-operative rehabilitation in humans after cruciate surgery has been reported to improve prognosis and to reduce the development of joint stiffness and osteoarthritis.
- In animals rehabilitation has been suggested to:
  - Decrease muscle spasm
  - Promote tissue healing and repair
  - Increase range of motion
  - Decrease oedema
  - Increase muscle strength and endurance
  - Improved cartilage nutrition
  - Decrease adhesions
  - Maintain muscle mass, bone, cartilage and ligaments and provide the stress needed for reorganisation of transplanted tissues.
- It has been suggested that low impact exercise, such as walking and swimming, avoid worsening of osteoarthritis whilst maintaining muscle strength joint mobility and function.

- Rehabilitation Candidates
  - All dogs who have neurologic or orthopaedic conditions are candidates for rehabilitation, particularly animals recovering from surgery – for example range of motion exercises may be used after repair of a fracture to prevent quadriceps tie down.
Rehabilitation techniques

- Adequate analgesia in the postoperative period to reduce pain, stress and to encourage early movement is absolutely essential - techniques to achieve this include use of opioids, NSAIDs and local anaesthesia.
- Initial cold therapy to reduce oedema/inflammation for first 24-48 hours around surgical site. Similarly bandages and passive range of motion exercise can be useful.
- Heat (with hot packs or therapeutic ultrasound) after 4-5 days to relax muscles, increase comfort and aid tissue elasticity.
- Soft tissue (muscle) massage
- Passive range of motion exercises
- Assisted weightbearing exercise/weightshifting exercise if unwilling to use the limb
- Low impact controlled (lead) walking activity
- Hydrotherapy
- Specific exercises to build strength and mobility—sit to stand exercise, walking though long grass, uphill walking

- Monitor outcomes – assess muscle circumferences/groups, degree of weightbearing, degree of range of motion etc.

Physiotherapy of the recumbent patient

- Physiotherapy helps to maintain and improve peripheral circulation and is of benefit to all recumbent patients.
- Massage from the toes to the body to encourage venous return to the heart.
- Manual movement of the joints within their normal range of motion helps prevent stiffness and improves circulation.
- Supported exercise (with towels or sling) may also be useful, although care to have adequate staff members to support the animal without risk of injury to the staff or patient should be taken.
Postoperative care following joint surgery

Example:
Cranial cruciate ligament rupture repaired using extracapsular lateral fabello-tibial suture:

• Postop care is as important as the surgical technique itself and poor postop management is a common cause of failure. Research has shown that significant benefits in limb function occur when formalised postoperative physiotherapy is performed following extracapsular stabilisation.

• Early physical therapy limits the untoward effects of immobilisation such as muscle atrophy, joint stiffness and cartilage degeneration.

• Adequate analgesia is essential and is provided with opioids (over the first 24-48 hours) and NSAIDs, such as Rimadyl/Metacam etc. (usually a 30 day course as long as no contraindications).

• Postoperative physiotherapy can begin on the first postoperative day with cold therapy (ice-packs for the first 48 hours), gentle passive range of motion exercises and muscle massage.

• Leash walking is required over the following 3-6 months
  o All running must be strictly avoided as should be excessive playing, stairs and jumping.
  o Very strict rest for 2 weeks with short walks for toilet purposes. Over this time the dog should be encouraged to touch the floor to the ground and gradually build up its weightbearing.
  o By the time of suture removal at 10-12 days the dog should be consistently placing the foot to the ground although will only be slightly weightbearing.
  o Over the next 4-6 weeks lead walking is increased to 10-15 minutes 3-4 times daily with a consistent improvement over this time.
  o By 8-12 weeks after surgery the amount of lead walking is gradually increased.
  o Over this period of time hydrotherapy has been found to be very effective at improving limb function.
  o From 3mths to 6mths after surgery the dog should gradually return to normal activity.
  o If there is no improvement or if there is a deterioration, reassessment and potential investigation for infection or failure of the suture should be performed. Acute recurrence of lameness is most commonly due to a late meniscal injury (reported risk of 13.8% in one study when intact at surgery) or infection and radiographs, joint fluid analysis and possibly repeat exploratory arthrotomy may be indicated.
Ongoing management of DJD is essential – weight control, carefully monitored exercise and NSAIDS as appropriate.

**Client education and compliance.**

Compliance suggests that the pets in your practice are receiving the care that you believe is best for them and may be divided into client and animal compliance.

Client compliance can be improved by effective education – to include verbal, written and visual information, including information to take home. The practice team can take steps to ensure that the patient receives the recommended care by recommending follow up appointments, providing written instructions and by sending reminders for services such as vaccinations and routine dental treatment and by making follow up phone calls.

**Recommended reading:**