

Welcome to the first Torrington Orthopaedics Newsletter for Veterinary Nurses

This is the first edition of our new quarterly nursing newsletter. In this edition we will be looking at the importance of asepsis and good pre-operative patient preparation. Future editions will cover other aspects of nursing orthopaedic and spinal patients.

Why is Aseptic Technique important?

The principle of surgical asepsis is to completely exclude all micro-organisms from the surgical wound. Strict aseptic technique minimises surgical wound contamination, therefore reducing the possibility of a potentially serious post-operative wound infection occurring. A surgical wound infection is defined as an infection that develops at the op site within 30 days of surgery, or within 1 year if implants have been placed. In principle this is to completely exclude all micro-organisms from the surgical wound, but in reality, we use protocols to reduce wound contamination as much as possible, therefore reducing the chance of a wound infection developing.



All surgical wounds become contaminated but not all become infected. Wound contamination must reach a critical level before a wound has the potential to become infected. A number of other factors also have an influence on a wound infection occurring, these include age, patient condition, concurrent systemic disease and length of time since wound became contaminated.

In practice we need to ensure that wound contamination is minimised to reduce the chance of post-operative infections occurring.

Sources of Wound Contamination

The patient is the most common source of contamination from the patient's own endogenous flora and exogenous flora (environmental contaminants) on the patient's skin and coat. Other sources of wound contamination are:

- Surgical instruments and equipment - if you are unsure of the sterility of any item it should not be used.
- Theatre environment - a clean, disinfected, clutter free environment is important.
- Surgical team - all precautions should be taken to prevent transfer of micro-organisms from the team to the patient.

Patient selection is also important, if the surgery is elective it is important to ensure the patient is in the best possible condition prior to surgery. This is even more important with patients undergoing total hip replacement surgery where the implants will need to remain in place for the rest of the animal's life. Any post-operative infection may result in the implants needing to be removed. The skin, ears, mouth etc. should be checked for signs of bacterial infection. If there are any signs of infection or concurrent disease, these should be treated before total hip replacement, or any other elective orthopaedic surgery, is performed.

Clipping The Surgical Area

The surgical site should have all hair removed immediately prior to surgery. We use Moser clippers with a size 40 blade. Hair should not be removed with a razor - this has been linked to a 10-fold increase in post-operative wound infections. Hair removal creams can also irritate the skin, increasing the chance of skin infection post-operatively. Hair should initially be clipped in the direction of hair growth, and then in the opposite direction, against the direction of hair growth. This ensures a close clip, but decreases the incidence of skin irritation or "clipper rash". All



forms of hair removal cause a degree of skin damage, leading to rapid bacterial colonisation of the damaged area. If the time between hair removal and the start of surgery is increased, the incidence of post-operative wound infection is also increased. It is important therefore that the site is clipped after induction of anaesthesia, and *following* any radiography or investigations performed. For joint surgery, the joints above and below the joint to be operated on should be included in the clip. Unless the foot is to be operated on it should not be routinely clipped, it should be covered. We cover the foot with cohesive bandage.

Skin Preparation



It is not possible to sterilise the skin. The aim of pre-operative skin preparation is to reduce the number of bacteria present on the surface of the skin. It is important to thoroughly cleanse the skin but care must be taken not to cause damage as this will cause endogenous bacteria to rise through the hair follicles and contaminate the wound more rapidly than normal. The scrub solution should contain both a detergent component and an antiseptic component. Organic matter is removed from the skin by the detergent. Exogenous or transient bacteria levels are reduced by the antiseptic. Chlorhexidine sponges (pre-packed and sterilised) and surgical spirit soaked gauze swabs are used to prepare the skin. Cotton wool is not used as it sheds bits onto the skin. Gloves and an apron are worn

whilst prepping the skin to prevent transfer of any micro-organisms from the nurse to the patient. The skin is first degreased with a spirit swab, the chlorhexidine sponge is then



used to produce a lather. The lather remains in contact with the skin for 30 seconds and is then removed using more spirit swabs. This process is repeated

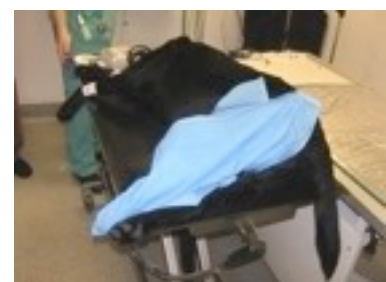


a minimum of three times, but the cycle is repeated until the skin is clean.

Finally the surgical area is sprayed with a Hibitane and surgical spirit solution. This

provides a residual action on the skin surface. During surgery, endogenous bacteria can come to the skin's surface, via the follicles, and contaminate the surgical wound. The residual action of the Hibitane spirit spray will help reduce the number of bacteria contaminating the wound. For Total Hip Replacement patients, the prepping routine is extended. The first prep is the same, the limb is then prepped again using sterile gloves and fresh solutions. A final prep is performed once in theatre, again with sterile gloves and sterile swabs.

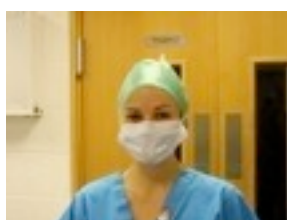
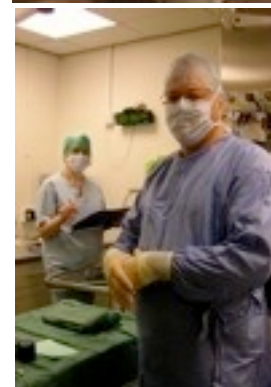
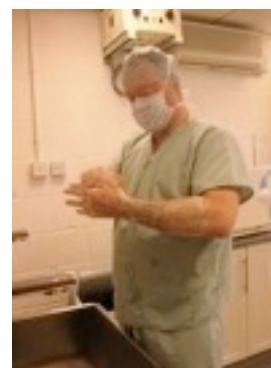
Once the surgical area has been prepped, it is covered with a sterile disposable drape to protect the area during the transfer to theatre.



Preparation of Surgical Staff

All staff entering theatre during surgery must wear a hat, face mask and change into dedicated theatre clogs. All theatre staff change into a clean scrub suit to prevent transfer of micro-organisms, debris and hair etc into theatre. A clean set of scrubs are used for each surgery performed, not one suit for the whole day.

The surgeon uses the same sterile chlorhexidine scrub brushes (E-Z Scrubs) to scrub up prior to surgery. Sterile long sleeved disposable gowns are worn by the surgical team, disposable gowns are waterproof and therefore better at preventing “strike through” compared to reusable fabric gowns. Sterile surgical gloves are worn and a closed gloving technique performed. For Total Hip Replacement surgery the surgical team will double glove to provide extra protection. Face masks are worn by everyone in theatre during surgery. This helps protect the surgical wound from saliva droplets, but the mask becomes less effective the longer it is worn, it becomes damp and “strike-through” can occur. Hats are worn by all staff entering theatre, both during procedures and at any time theatre is entered e.g. during cleaning. Hats are the most useful item of protective clothing as hair is a primary source of contamination. They reduce the shedding of hair and bacteria (hair harbours bacteria) and the hat should cover the temporal and occipital regions of the head. We use both reusable fabric hats and disposable nurses caps.



Maintaining Theatre Sterility

Our theatres are designed to limit traffic through them, and access to theatre is limited to only those necessary for the surgery (surgeon, anaesthetist, circulating nurse). Staff enter theatre through our scrub and gown area, where shoes are changed and hat and mask put on, they then enter theatre and receive the patient, on a trolley, from the prep area.

At the beginning of each day all surfaces in theatre are wet-wiped with a Trigene solution, to remove any dust particles that may have settled overnight. Between cases all surfaces, trolley, table and floors are thoroughly cleaned, again with a Trigene solution. At the end of each day the theatres are deep cleaned, all equipment removed and all surfaces (including walls etc.) are again cleaned with a Trigene solution.

Once weekly the theatres are also steam cleaned.

We regularly take environmental swabs to be analysed by an external lab. These are cultured and we also request MRSA testing. Monthly we also perform agar plate testing which again reassure us that the theatres are sterile and bacteria free.

We also have an Otex Air Purifier in each theatre to reduce the levels of microbes in the air.

Theatres are steam cleaned more often if we have operated on an open fracture or wound or flushed a septic joint. The theatre is also steam cleaned the night before Total Hip Replacement surgery.

Upcoming Nursing CPD Orthopaedic Instrumentation



**Wednesday 22nd April
7.30pm for 8pm start**

An essential course either before sitting your nursing practical exams or as a refresher

See instrumentation used in Tibial Tuberosity Advancement and Total Hip Replacement surgery as well as the more common orthopaedic instruments and implants

£10 per person

If you require any further information or have any questions relating to the content of this quarter's newsletter please do not hesitate to contact our nursing team by telephone on 01484 404770 or by e mail using lisa@torvet.co.uk.

Hydrotherapy at Torrington Orthopaedics

Hydrotherapy is a non-weight-bearing form of exercise, performed in warm water. Here at Torrington Orthopaedics, our team of qualified hydrotherapists use an underwater treadmill (UWT) to provide a controlled form exercise that encourages joint movement and promotes return of normal gait patterns. The aim of hydrotherapy is to improve range of motion, muscle mass, strength, cardiovascular stamina and reduce pain.



Our hydrotherapy sessions are conducted by qualified Registered Veterinary Nurses with further City & Guilds/

NOCN qualifications in hydrotherapy. Our team is one of a very small number of fully qualified teams in Yorkshire. The hydrotherapy team work closely with our Chartered Registered Physiotherapist to provide a full rehabilitation service for our patients. After an initial assessment by the rehab team, a treatment plan is devised for the individual patient. Patients are reassessed at each session, and the

treatment plan is altered accordingly. The UWT has a rear entry door with non-slip ramp for patients to walk up to access the treadmill. (The use of hoists and lifts can distress some patients). The treadmill fills with treated water from below the belt, and the height of the water is carefully controlled by the hydrotherapist. The patient is in contact with the belt at all times (closed-chain exercise) which can promote natural gait patterns and aids proprioception.

Water depth, speed and time can be controlled independently. Water levels are usually higher initially to provide support during exercise. Water levels are gradually decreased as the patient improves and recovers, allowing the patient to increase the load through the limbs until they reach their original fitness levels.

Many of the beneficial aspects of hydrotherapy are due to the actual properties of water itself, including buoyancy, resistance, density, hydrostatic pressure and surface tension.

Water is warmed and maintained at approximately 28°C. This increases the circulation within the muscles promoting use and repair, increases joint flexibility and soothes painful tissues.

Other aspects of hydrotherapy will be discussed in future issues of the newsletter.

Meet the Staff at Torrington Orthopaedics

Each quarter we will introduce some of our staff members



Becky Thoesby RVN

Becky qualified in 2005 and joined Torrington Orthopaedics in January 2008. Since joining our team she has been promoted to Surgical Team Leader and has also enrolled with Myerscough College to study for the Diploma in Advanced Veterinary Nursing which she will start in September 2009. As Surgical Team Leader she organises the day to day running of the prep, radiography and theatre areas. Becky is also responsible for implant ordering and surgical equipment maintenance/repair. Becky's main interests are radiography and surgical nursing.



Charlotte Whiteley RVN Cert SAN

Charlie qualified in 2003 and joined the Torrington Orthopaedics team in December 2005. Charlie is head of our Hydrotherapy Department and forms part of our rehabilitation team, working along side our Chartered Physiotherapist. She is a fully qualified hydrotherapist achieving her NOCN Cert Hydrotherapy in 2007. Charlie also recently achieved a City & Guilds qualification in Small Animal Nutrition and is currently studying for a qualification in behaviour. Charlie thoroughly enjoys working with all our rehabilitation patients.

