Minor surgery in primary care

Minor surgery in primary care has long been held to be cost-effective and popular with patients. Minor surgical procedures in primary care include:

- Cryotherapy.
- Electrocautery.
- Curettage.
- Therapeutic injections used in a variety of conditions - eg:
    - Injections into joints (steroids but also perhaps viscosupplementation).
    - Aspiration of joints.
    - Injection of tennis and golfer's elbow, or carpal tunnel injection.
    - Injection of varicose veins and piles.
- Excisions.
- Incisions.
- Other surgical procedures which the practice is deemed competent to carry out - eg, skin biopsy (punch and shave), endometrial sampling, removal of toenails, removal of contraceptive implants, evacuation of perianal haematomas and removal of skin lesions where clinically indicated (see local guidance).

Basic minor surgery

Equipment and accommodation

- Most surgeries have a dedicated treatment room in which such surgical procedures are performed; however, cryotherapy, electrocautery and curettage can be performed in a normal consultation room, provided that there is adequate lighting and space.
- A clean area is not as important as for 'cutting' surgery but it is desirable and creates a favourable impression of a professional service.

- Equipment should be appropriate to the job and of adequate specification:

    - A curette can be sharp or blunt. A sharp curette is more frequently employed, although it can cause more damage if used without skill. A range of sizes adds versatility. Disposable instruments are now recommended. A hot water boiler is inadequate and even pressurised autoclaves can no longer be recommended.
    - If there is any uncertainty about the adequacy of equipment, the Clinical Governance team of the local Clinical Commissioning Group (CCG) should be able to give advice.
    - Appropriate infection control measures should be in place. National Institute for Health and Clinical Excellence (NICE) guidance is available [1] .
    - Electrocautery is provided by a hot wire. This apparatus usually works on about 12 volts. This may be provided by a battery but a transformer plugged into the mains is more usual. There is a button on the handle to switch the current on and off. There may be a number of heads of various shapes and sizes for various jobs. They can be removed to be cleaned and sterilised but letting them glow red will provide a much higher temperature than any autoclave, although not for so long.
    - Cryosurgery requires a cold source and the most common is liquid nitrogen. It can usually be bought by special arrangement from a local hospital or directly from a supplier if a storage vessel is purchased. It is essential to remember that it is exceptionally cold with a boiling point of -196°C and so requires appropriate precautions for use and storage. Thick gloves and goggles must be worn when decanting or transferring liquid nitrogen.

Organisational issues

These surgical procedures can be carried out:

- In normal consultations. Most people do not perform minor surgery during the course of normal consultations, except perhaps the injection or aspiration of joints and such techniques.

- At a dedicated session. It can be better to ask the patient to return to a dedicated session in a specific room with the equipment set up and, in the case of liquid nitrogen, with a fresh supply of the material to hand.

Consent

The question of informed consent is discussed in the separate Consent to Treatment and Consent to Treatment in Children articles, both dealing with mental capacity and mental health legislation. Informed consent requires full information on the proposed treatment, alternatives and possible complications including, for example, a measured opinion about the cosmetic result. Standardised information sheets can be useful.

Techniques

The following techniques form the basis of minor surgery provision under additional services:

Local anaesthesia

- Sometimes lesions are so superficial that they can be removed without any need for local anaesthetic. It is required for cautery but should not be used with cryotherapy.
- Lidocaine 1% is the most commonly used local anaesthetic and it can be used for these procedures. It is most conveniently administered using a dental syringe with a fine dental needle and cartridges made for the syringe.
- A lidocaine/adrenaline (epinephrine) mixture is often used. This prolongs the duration of action and increases the total dose that can be used; however, its greatest asset is that it induces vasoconstriction and so reduces bleeding. It must not be used on fingers, toes or the penis.
- If analgesia is required on a mucous membrane it is possible to apply lidocaine directly via a piece of gauze and this numbs the surface so that injection is less painful. It does not cross the horny barrier of keratinised epithelium in the skin and so is of no use to numb skin. For topical use, a 2% or 4% solution is acceptable but otherwise a maximum of 1% is recommended.

- Remember that after injection of local anaesthetic it is necessary to allow a few minutes for the injection to have its effect.
- Another way to obtain superficial topical analgesia is to 'freeze' the skin with an ethyl chloride spray. This is a highly volatile liquid that comes in a large ampoule with a spring-loaded rubber stopper. It is inverted over the lesion and vapour pressure of the liquid ensures that when the cap is opened a fine spray of ethyl chloride is directed at the lesion. Usually it takes about 15 to 40 seconds for the area to turn white before beginning the procedure. Although it is a convenient method, it is not very effective and the duration of action is very limited. It may be necessary to stop and spray again a number of times. It is used by some for superficial curettage but use is probably not widespread. **NB**: ethyl chloride is highly inflammable and must not be used in association with electrocautery. It should not be used close to the eyes, nose, ears or other orifices.

Curettage

- Curettage is reserved for superficial lesions like seborrhoeic keratosis and solar (actinic) keratosis, which are usually so superficial that removal does not leave a scar.
- Keratoacanthomas can also be removed by curettage but it tends to be deeper and often leaves a scar.
- Ethyl chloride can be used for analgesia but if the lesion is thick and horny it may not penetrate and so infiltration under the lesion with lidocaine is preferable.
- Hold the neighbouring skin firmly with the non-dominant hand and, with the curette in the dominant hand, use a firm motion to get under and elevate the lesion. Sometimes a rather raw area below the lesion oozes blood. Firm pressure with a piece of gauze for several minutes should stop this. Alternatively a superficial electrocautery can seal the vessels (but not if ethyl chloride has been used).
- Removal of a keratosis often just produces a cornified lesion that is of no value for histology but, wherever possible, excised tissue should be sent for histology (to confirm the clinical diagnosis and to exclude malignancy).

Electrocautery

- Electrocautery can be a useful technique, especially when a lesion is vascular.
- The equipment used usually has a range of settings, typically from 1 to 10 (for example, coagulation between 3 and 4, cutting between 6 and 10).
- Its main disadvantage is that it often burns the tissue beyond recognition so that it is impossible to obtain histological confirmation of the lesion. Patients sometimes find the smell of burning tissue rather distressing.
- It is useful for removal of skin tags when the diagnosis is usually clear. In obese patients these are often multiple. A little bleb of local anaesthetic is injected into the base of each.
- Remember that ethyl chloride is contra-indicated.
- After giving a few minutes for the local anaesthetic to work, grasp the lesion with a pair of forceps and press the button on the handle so that the tip glows bright red. This usually takes 5 to 10 seconds. Then touch the base of the lesion with the glowing coil and it will cut swiftly though it. The lesion comes away in the forceps and there is usually no bleeding. If there is a little bleeding then touching the area with the glowing tip should seal it.
- A few hours later, when the local anaesthetic has worn off, the patient may feel discomfort in the burned area and this may need simple analgesia.

Cryotherapy

- Local anaesthesia should not be used and is not necessary.
- Cryotherapy works by rapidly freezing tissue cells which then thaw, causing lysis of cells.
- Cryospray, cryoprobes or cotton-tipped applicators can be used.
- The art of this technique is to apply enough cooling to destroy the lesion without applying too much and causing collateral tissue damage. If in doubt, undertreat, as it is possible to treat again but overtreatment will destroy healthy tissue.

- The contact with the tip produces a rim of blanching. It may then freeze the lesion to the tip and it can be pulled away but more often it falls away some time later. This means that there is often no tissue for histology.
- It is recommended that the technique be learned by attending a course or from an experienced and appropriately trained practitioner.
- Knowing what to treat and what not to treat with cryotherapy is most important. Cryotherapy can be used very successfully for a variety of lesions. The list below of lesions treatable with cryotherapy is not exhaustive and does not imply that the technique is appropriate for all such lesions. An important part of learning the technique is getting familiar with what can be treated successfully and what lesions require other techniques and possibly referral.

    - Actinic keratoses.
    - Seborrhoeic keratoses.
    - Warts and verrucae.
    - Lentigines.
    - Skin tags.
    - Superficial spreading basal cell carcinoma.
- It is worth avoiding:

    - Lesions on the pinna (can cause necrosis of cartilage).
    - Lesions close to the eye.
    - Treatment of lesions on the hands and feet in Raynaud's phenomenon.
- Complications can arise after treatment and patients should be warned of these. Blistering and pain occur frequently.

Procedures with a directed enhanced service

Eligibility requires:

- Satisfactory facilities:
    - Appropriate equipment for procedures undertaken.
    - Appropriate equipment for resuscitation.
    - Appropriate premises.
- Nursing support:
    - Appropriately trained and competent.
    - Professionally accountable to their professional body.
- Sterilisation and infection control compliance (see 'Infection control and instrument sterility', below).
- Appropriate clinical waste disposal.
- Consent.

- Pathology services:
    - All specimens to be sent for histology.
    - Partner, employee or subcontractor with the necessary skills to carry out contracted procedures as well as:
        - Competence in resuscitation.
        - Regular update of skills.
        - Ability to demonstrate a continuing and sustained level of activity.
        - Conducting regular audits.
        - Participation in appraisal of minor surgery activity.
        - Participation in supportive educational activities.
    - Patient information:
        - Proper written record.
        - Inform own GP in writing if not registered with the practice.
- Audit - see under 'Audit' heading, below.

CCGs have outlined in more detail what accreditation for minor surgery is required. For example, doctors may be required to attend a minimum number of training sessions specifically for minor surgery.

Examples of guidelines for basic procedures with a directed enhanced service

Making an incision

The example here uses the excision of a small skin lesion to show the basic techniques required to minimise the scar and the chance of complications. It uses a spindle-shaped incision either following the direction of skin creases or designed to minimise skin tension in joint areas. The following steps are involved:

- Draw the incision line, allowing at least a 2 mm margin from the lesion. The length of the incision should be at least three times its width to help with producing a neat closure.
- Clean and sterilise the skin; then anaesthetise the area and wait for it to take effect
- Stretch the skin at 90° to the incision with two fingers of your left hand and, holding the scalpel vertical to the skin, cut outside the line. On hairy skin, cut at the angle the hairs exit the skin.
- You should try to cut down to the subcutaneous fat in one stroke but avoiding reaching the deep fascia. Remember that skin varies in thickness over the body. Try not to 'fish-tail' at the ends of the wound.
- Avoid or take special care in those areas where important structures lie close to the surface, eg:
    - The side of the face near the ears.
    - The neck.
    - The axillae or popliteal fossa.
    - The wrist or palmar aspect of the fingers.
    - The femoral or inguinal triangle.
    - The shins.

Performing skin biopsy

- The area of skin needs to be removed with minimum damage for optimum examination results:
    - By using either a skin hook or a silk suture at a corner of the specimen, instead of forceps.
    - By gently dissecting skin away from subcutaneous fat, with blunt-tipped scissors using 'separate and snip'.
- The specimen is then placed in 10% formalin in saline and sent to the laboratory.

Suturing

- For small wounds not under tension, the edges can be held together with adhesive closure strips or enbucrilate glue.
- Skin suturing is usually performed with monofilament nylon or polypropylene and a curved or half-circle cutting needle.
- Subcutaneous suturing is no longer performed with absorbable chromic catgut; synthetic absorbable materials are now used.
- A reverse cutting needle is used when the sutures are unavoidably near to the edge of the wound or the wound is under tension.
- All knots should be reef knots with an additional third throw and 5 mm tails left for easy removal.
- Superficial wounds should be closed with the finest suture material available using entry and exit points that are equally spaced both either side of the wound and along its length.
- With deeper wounds, subcutaneous tissue needs to be closed first, using either interrupted deep sutures or vertical mattress sutures, cut to the knot.

Intraoperative complications

Fainting

Incidence can be reduced by having the patient lie down during the procedure. If syncope does occur, put the patient in a head-down position. An airway may need to be inserted if breathing is at all compromised. The patient should soon recover so that the procedure can be quickly finished. If bradycardia does not resolve, consider giving atropine.

Bleeding

Significant haemorrhage is not normally a difficulty in minor surgery but, if it does occur, the normal haemostatic measures are usually effective - eg, apply firm pressure with a dressing for two minutes and raise the affected areas above the heart. If this fails, introduce a little of the anaesthetic containing adrenaline (epinephrine) or an haemostatic agent (aluminium chloride or ferric sulfate) into the wound. Physical methods include squeezing bleeding points with fine forceps and ligaturing small blood vessels with absorbable sutures.

Resuscitation

Resuscitation should be conducted, when required, according to the appropriate guidelines. Regular training in resuscitation is necessary for medical and nursing staff involved in minor surgery.

Dressing the wound

Small wounds generally just need a plaster and more extensive areas should be covered with an absorbent, non-adherent dressing held in place with a Micropore® tape or a bandage, depending on the site. OpSite® spray is a convenient alternative in difficult areas.

Aftercare

Patients should be told to rest the affected area and raise any leg involved. Arms can be placed in a sling and fingers or toes immobilised by strapping together with the adjacent digit. Sutures are removed at between 5 and 12 days depending on the site, with the hands and feet requiring the longest interval. This also gives an opportunity to inspect the wound for any problems, such as infection or failure to heal.

Audit

- It is good practice to audit minor surgery, whether being undertaken as a directed enhanced service or not.
- Audits require accurate record keeping and consistent computer data entry. The following can usefully be recorded:
    - Number and type of procedure.
    - The operator (who performed them).
    - Clinical diagnosis.
    - Tissue diagnosis (adequate removal - for example, clearance in excisions).
    - Complications.

Infection control and instrument sterility

- Minor surgery in general practice has a low incidence of complications [2] .

- It is important that practices providing minor surgery operate to the highest possible standards.
- To maintain high standards, practices should:
    - Have approved sterilisation procedures which reflect national guidelines
    - Obtain sterile packs from the local central sterile supply department (CSSD).
    - Use disposable sterile instruments.

Infection control guidelines

NICE recommendations are divided into three broad recommendation headings [1] :

- **Hand hygiene**: hands must be decontaminated immediately before each and every episode of direct patient contact or care and after any activity or contact that could potentially result in hands becoming contaminated.
- **The use of personal protective equipment**: gloves must be worn as single-use items. They must be put on immediately before an episode of patient contact or treatment and removed as soon as the activity is completed. Gloves must be changed between caring for different patients and between different care or treatment activities for the same patient. In a recent study, only 33.1% of GPs reported wearing gloves during minor operations.
- **The safe use and disposal of sharps**.

The Department of Health and Social Care (DHSC) has also published a Code of Practice on the prevention and control of infections which is relevant to all practices providing minor surgery (and any service which requires the use of sterile instruments) [3] . The code requires that:

- A designated person is responsible within the practice, to manage and monitor the control of infection.

- An infection control policy should be instituted by the practice, which should say:
    - What infection prevention and control measures are needed in the practice.
    - What policies, procedures and guidance are needed and how they will be kept up-to-date and monitored for compliance.
    - What initial and ongoing training staff will receive where appropriate.
- The practice should keep a list of contacts who can be contacted for advice.
- An annual statement should be prepared, available to anyone who asks to see it, detailing:
    - Known infection transmission event and actions arising from this.
    - Audits undertaken and subsequent actions.
    - Risk assessments undertaken for prevention and control of infection.
    - Training received by staff.
    - Review and update of policies, procedures and guidance.
- Premises should be furnished taking account of national guidance and rooms with specialist functions - for example, minor surgery.
- Appropriate arrangements should be in place for the safe disposal of clinical waste.
- Clothing should be 'clean and fit for purpose'.
- Practices should make sure that any biological samples sent for histology are transported in non-leak containers and in a manner that is consistent with current legislation.

Decontamination

The DH defines decontamination as 'the combination of processes (including cleaning, disinfection and sterilisation) used to make a reusable item safe for further use on service users and for handling by staff.

The DHSC Code of Practice requires that:

- A decontamination lead be appointed by the practice (this can be the same person as the infection control lead) with responsibility for devising a decontamination policy and monitoring all aspects of the decontamination cycle.
- The decontamination policy should be consistent with national guidelines and legislation.
- Premises should be cleaned and managed to facilitate infection control (the National Patient Safety Agency (NPSA) has published detailed guidance for maintaining cleanliness in primary care facilities).
- Records of decontamination should be kept.
- Decontamination of reusable medical devices should follow national policy where available. Single-use medical devices should not be reused. Equipment used for decontamination should be routinely inspected, maintained and validated.

Further reading

- Bryant A, Knox A; Ingrown toenails: the role of the GP. Aust Fam Physician. 2015 Mar;44(3):102-5.
- Skin Surgery Guidelines; Primary Care Dermatology Society, January 2007
- Surgical site infections: prevention and treatment; NICE guideline (April 2019 - last updated August 2020)

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