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PRACTICE

10-MINUTE CONSULTATION

Minor incised traumatic laceration

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This is part of a series of occasional articles on common problems in primary care. The *BMJ* welcomes contributions from GPs.

A 40 year old man consults with a minor laceration of the left arm. He cut himself with a knife while working in the garden. He has washed the wound and the bleeding has stopped.

What you should cover

Medical history

- Minor incised traumatic lacerations often happen during daily household activities, while working, and while doing sports and hobbies.
- Explore the mechanism of injury and consider the possibility of contamination of involved surfaces or instruments. Ask about the time of the laceration and about subsequent cleansing and disinfecting.
- Explore risk factors for potentially compromised wound healing, such as diabetes mellitus, use of immunosuppressive medication, peripheral vascular disease, bleeding diathesis, and history of keloid formation or scar hypertrophy.
- Ask the patient's preference for method of wound closure. Most lacerations can be managed in primary care; closing methods include transcutaneous or intracutaneous sutures, adhesive (cyanoacrylate) glue, or adhesive plasters.
- Inform the patient about risk of infection, pain during the procedure, and scarring. Obtain and record informed consent.

What you should do

Physical examination and wound cleansing

- Inspect thoroughly the size, edges, and depth of the wound, particularly focusing on damage to the underlying and surrounding tissue, the vitality of the wound, and contamination. Check motor and sensory function distal to the wound, as well as circulation (pulses, capillary refill). Assess for tendon damage by checking movement and range of motion, especially for lacerations on extremities. Localised sharp pain when a wound is palpated is a useful indicator of a possible foreign body.
- Refer the patient to a surgeon if you diagnose or suspect musculotendinous injury; if the wound is more likely to result in a poor cosmetic outcome (such as crossing the lip, nose, or ear); or if you cannot establish the extent of damage to the underlying tissue.
- Profusely irrigate and cleanse the wound with tap water or sterile saline solution (neither is superior in terms of infection risk). Debride possible devitalised tissue, disinfect, and ensure haemostasis. Keep hair out of the wound. Use clean, non-sterile gloves. Evidence shows that using non-sterile gloves does not result in higher risk of infection than using sterile gloves. Do not close wounds with active signs of infection, but consider secondary closure after three to five days.
- Minor incised traumatic lacerations (≤5 cm) without signs of infection and no tendon injuries can be closed immediately (the Friedrich dogma that wounds older than six hours must not be closed is based on tests in guinea pigs in 1898). Properly disinfected lacerations may be closed up to 24 hours afterwards.

Wound closure

Adhesive glue and sutures have comparable cosmetic outcomes for minor incised lacerations □5 cm in adults and children treated by primary care doctors. The use of adhesive glue involves considerably less time for the doctor and less pain for the patient. Furthermore, economic analyses show that absorbable sutures are 2.4 times more expensive than adhesive glue and that non-absorbable sutures are 6.8 times more expensive. Adhesive skin glue was developed especially for skin closure and has been used extensively since the 1970s; several brands and types of applicators are available, with the most common being cyanoacrylate polymers packed in either single use vials or

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larger packages. The most recent Cochrane review of nine trials and 834 lacerations shows that adhesive glue has a slightly higher dehiscence rate (risk difference 2.4% (95% confidence interval 0.1% to 4.9%); number needed to harm 40) but fewer incidences of erythema (−10% (−19 to −0.4); 10). There is no risk difference for infections (overall risk 1.1%) Adhesive glue should not be used on mucosal surfaces, in areas with dense natural hair, or in areas of high tension or repetitive movements, such as joints or the posterior trunk. Choose adhesive plasters only in cases of very small, tension-free wounds.

Sutures

Use infiltration anaesthesia with an appropriate anaesthetic. Slow injection by a small needle (>20 gauge) will minimise the pain of infiltration. Avoid vasoconstrictors (for example, epinephrine) in areas with end organ blood supply, such as fingers, nose, and toes. Consider cutting away any jagged edges of the wound and devitalised tissue. Choose the size, material, and technique of the sutures according to the location (table⇓) and depth of the wound, while bearing in mind the differences in pulling strength and tissue reaction. Choose absorbable sutures in areas where suture removal would be difficult. Most lacerations can be closed using simple, interrupted, transcutaneous, non-absorbable sutures. Of these, synthetics have the least tissue reactivity, and monofilaments or braided materials may be used. The smaller the suture (note that “4-0” or “0000” is smaller than “3-0” or “000”), the lower the tensile strength of the strand. Sutures should exert minimal tension on the tissues and must be locked firmly.

Adhesive glue

Avoid applying adhesive glue to the subcutis or base of the wound. Apply glue only to the epidermal surface, while manually approximating the wound edges. Warn the patient of an exothermic reaction as the glue polymerises. Hold the margins together for several seconds until dry.

Wound dressing, patient advice, and follow-up

- Seal the sutured or glued wound with a bandage or absorbent dressing with an adhesive border. Advise the patient to minimise water contact for the first 24 hours, after which showering is allowed. Consider a waterproof dressing during activities that may contaminate the wound. Advise the patient to keep the wound clean and not to rub or scratch, as dehiscence may result.
- Check tetanus vaccination status and consider a booster or revaccination, according to local protocols. Consider prescribing antibiotics, according to local protocols (such as co-amoxiclav 625 mg three times daily for seven days), to patients with a laceration at very high risk of infection and to immunocompromised patients.
- With sutures, ask patients to return after five to 14 days for removal of stitches, depending on the location and the tension on the wound (table⇓). Generally the greater the tension across a wound, the longer the sutures should remain in place. With adhesive glue, tell patients that the film will fall off by itself.
- Explain that it may take up to a year to know the final cosmetic appearance of the scar. Advise the patient to seek medical attention if the wound shows increasing redness, purulent discharge, or swelling or if he or she develops a fever.

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Useful reading

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Table

Table 1| **Size of suture and length of time until removal of sutures for different anatomical locations**

Location	Suture size*	Time until suture removal (days)
Face	5-0 or 6-0	3-5
Scalp	4-0	7-10
Chest	4-0 or 3-0	7-10
Extremities	4-0 or 3-0	7-10
High tension area (joints) and back	3-0 or 2-0	10-14

*Defined by the US Pharmacopeia.