

61.1 The general method for lesser face injuries

The appearance of a wound is nowhere more important than on a patient's face. He is unlikely to be able to consult a plastic surgeon later, so your main task is to minimize his disfigurement. This mostly means a careful toilet and accurate repair with numerous fine sutures. Plastic surgeons have few skills which you don't have for the immediate care of a face wound—their remarkable achievements are mostly the result of careful attention to detail. So, handle a patient's tissues gently, and be prepared to take enough time. Don't operate on his face with equipment designed for abdominal or orthopaedic surgery, or apply artery forceps to the skin edges; use skin hooks. Your scissors should be sharp. The face has an excellent blood supply, and heals well, so: (1) Save all injured tissue that might survive. (2) Make immediate primary suture the rule in all except late or severely contaminated wounds.

The common errors are: (1) Not removing all dirt, and so leaving an area of tattooed scarring. (2) A scar with unnecessarily gross suture marks. (3) Failure to replace the wound edges in the correct position, especially those which involve the edges of the eyelids, eyebrows, lips, or nose, like that in A, Fig. 61-2.

GENERAL METHOD FOR LESSER FACE WOUNDS

If a patient's eyelids and eyebrows are injured, turn to the previous chapter(60.3). If he has a severe maxillofacial injury, turn to the next one. Read on for injuries of his lips, gums, and tongue (61.2), injuries to his facial nerve and parotid gland (61.3), and for injuries to his ears and nose (61.4). You will probably be able to treat him as an out-patient, but if repair is likely to take 2 hours or more, or you have to graft him, admit him.

EQUIPMENT A No. 5 scalpel handle, No.15 scalpel blades, Metzenbaum scissors, Glasgow pattern scissors, Adson's dissecting forceps, Derf needle holder, 2 skin hooks, mosquito haemostats, skin graft knife and board, fine needles, and 4/0 chromic and monofilament sutures.

BLEEDING Try to control this by direct pressure, and avoid buried ligatures if you can.

EXAMINATION If a patient's facial nerve might have been injured, test its function before you anaesthetize him. Ask

him to smile, and see if his smile is symmetrical. Don't forget to examine his eyes (23.1).

SUTURING A FACE WOUND

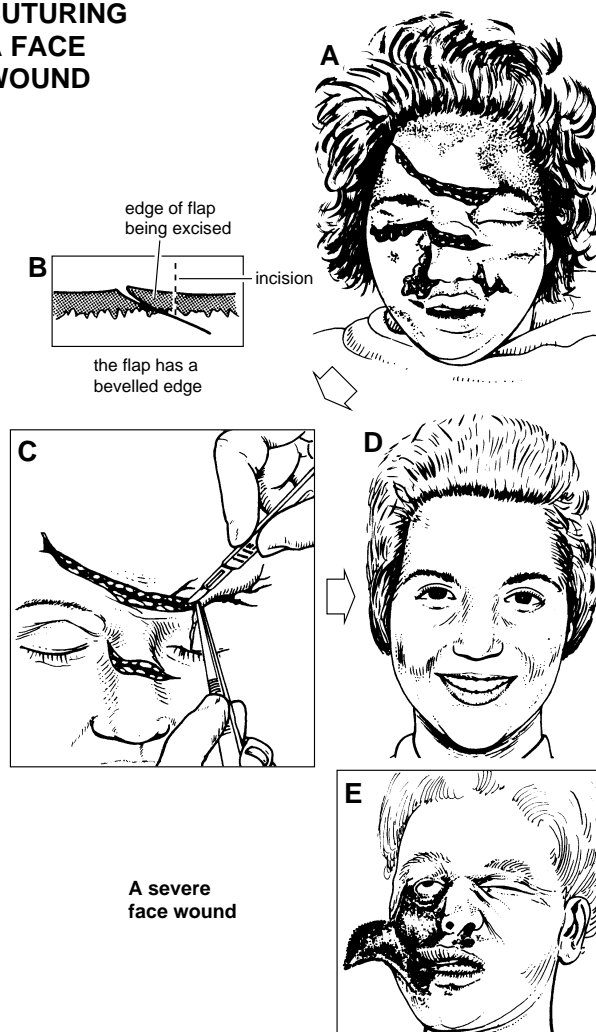


Fig. 61.1: SUTURING A SEVERE FACE WOUND. This patient was thrown against the windscreen of her car. The flap on her forehead has a bevelled edge, so B, and C, show the thin edge of this flap being excised before suture. D, the final result. E, if a patient's face looks like this, make sure you suture his tissues back in their proper places. With the kind permission of James Smith.

ANAESTHESIA (1) Ketamine. (2) General anaesthesia with intubation. (3) Local nerve blocks, which are better than local infiltration because they will not distort the tissues. Where possible, use a mental nerve block (A 6.3), or an infraorbital or supraorbital nerve block (A6.5). If you do use local infiltration, add hyaluronidase (1500 units in 10 ml) to help the solution spread through the tissues and minimize swelling.

If you sedate a patient with diazepam or chlorpromazine, he may fall asleep during the operation. A child will usually cooperate if you reassure him authoritatively and sedate him adequately. If you can, do the repair quickly. You may be able to do it while you restrain him. If necessary, wrap his arms and legs in a sheet as in Figure A 18-1.

TOILET If necessary, shave the patient's scalp, moustache, and beard, but leave his eyebrows. A wound can be difficult to align without them. Do a social and, when necessary, a surgical toilet (54.1). Clean his wound adequately, irrigate it copiously, and explore it. You may find a fracture, or foreign bodies, such as glass from a broken windscreen, or grit from the road.

Where possible, plan the suture lines in or parallel to the skin lines as in Fig. 61-3. This will greatly improve the look

of the scar.

If the wound edges are ragged or bruised, excise the minimum amount of skin, to give them a clean edge. Small tags of the skin which you would remove in other parts of the body will usually survive on the face, so replace them carefully.

CAUTION! If you remove too much tissue, you will make a plastic repair later more difficult.

If the patient's wound is very extensive, be conservative and only remove dirt and obviously dead tissue. The scar will inevitably be ugly, but he may be able to have it revised later.

If his skin is grossly contaminated with dirt, only excise it if there is no other way of removing the dirt.

If the edge of the laceration is steeply bevelled, as in B, Fig. 61-1, and you leave it like this, the scar will be ugly. So cut off the thin edge of the flap to make it perpendicular. The best wound edges for suture are vertical.

If two lacerations are closely parallel, the final scar may be neater if you excise the bridge of tissue between them.

If a piece of the patient's cheek is missing, as in B, Fig. 61-4, suture his skin to his mucous membrane, and refer him for a plastic repair later.

If his wound is ugly and you can excise it along the skin lines, do so.

If an extensive wound has distorted his anatomy, so that you do not know how to suture it, as in F, Fig. 61-1, look for a landmark at either side of his wound. Match these and the rest of the jig saw will fit together.

CAUTION! Time spent fitting the jig saw together is never wasted.

If his face has been extensively destroyed, fit the pieces that remain into their correct places. This will help you to see what has been lost.

IMMEDIATE PRIMARY SUTURE Don't close the skin until you have done all that is necessary to the structures underneath it. If you have done an adequate toilet, you can close most wounds by immediate primary suture.

Close the wound accurately at all points and in all planes. There must be no dead spaces. So, if necessary, insert tissue sutures of fine catgut to prevent cavities. If the patient's muscles of facial expression have been injured, try to bring them together to avoid dimples. Control bleeding, preferably by pressure, before you start to suture the wound.

Repair muscle, mucosa, and subcutaneous tissue with 4/0 chromic catgut, and skin with fine interrupted sutures of 4/0 monofilament. Place them 2 to 4 mm from the edge of the wound, but let them take an adequate bite of deeper tissue. Tie them only just tight enough to bring the skin edges together because the wound will probably swell and make them tighter. Tight sutures will leave the stitch marks.

If you cannot bring the skin edges together, cautiously undercut them and insert fat stitches.

CAUTION! The level at which you undercut the face is important. Cut just deep to the dermis, superficial to the branches of the facial nerve, as in A, Fig. 54-6.

If you have to suture a wound under moderate tension, you will have to leave sutures in for 2 or 3 weeks, or the wound will burst open. Leaving ordinary stitches in as long as this will cause ugly stitch marks. Instead, insert subcuticular sutures. If you are not suturing a wound under tension, ordinary sutures give a better result.

If you cannot bring the skin edges together, even by

METHODS FOR FACE WOUNDS

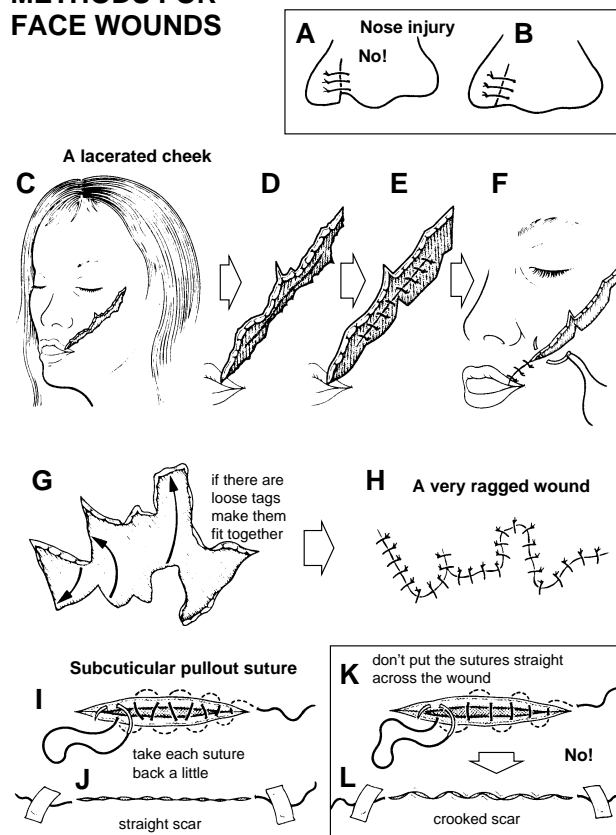


Fig. 61.2: METHODS FOR FACE WOUNDS. When you suture a patient's nose, don't leave a notch as in A; make sure there is no kink in the edge, as in B. If his wound is jagged, excise its edges and make them fit together, as in C, to E, and G, and H. Don't make sutures too tight, or they will leave an ugly scar. If a suture has to be tight, a subcuticular suture (I and J) will leave a better scar. The scar will be neater if you take each subcuticular suture back a little (I), and don't put sutures straight across a wound, as in K, and L. Partly after 'Techniques Elementaires pour Medecines Isolés', with kind permission.

undermining them or by suturing under moderate tension, graft the bare area with split skin. This will provide the best conditions for plastic surgery later.

CAUTION! (1) Don't allow the wound to close by spontaneous scarring. (2) Don't try to rotate any flap as a primary procedure, or try to graft with full thickness skin. These are both secondary procedures after a wound has healed and its scar has been excised. (3) Don't make 'relaxing incisions'.

If a small haematoma develops, evacuate it after removing a suture.

ANTIBIOTICS If a wound is more than 6 hours old give the patient a systemic antibiotic.

PARTICULAR FACE INJURIES

HAEMATOMAS If necessary, aspirate these with a wide bore needle.

ACCIDENTAL TATTOOS If grit or foreign bodies have been rubbed into the patient's skin, remove them with a stiff sterile nail brush. Use small circular movements, and press hard. If oil or grease has been rubbed into his wound, remove it with a little ether. If you leave foreign material in place in his skin, it will leave a permanent ugly scar.

AVULSION FLAPS After repairing the wound, apply a pressure dressing for several weeks, if necessary. This will minimise haematoma formation under the flap and will improve the scar.

BITES of any kind, especially human bites, are very likely to become infected. Excise the wound margins, and give the patient an antibiotic (2.7).

POSTOPERATIVE CARE OF FACE INJURIES

To minimize stitch marks, remove alternate stitiches after 3 days and the remaining ones 4 to 8 days later (except on the ears).

Reassure the patient that the scars on his face will soften and improve with time. He will not know what he is finally going to look like until at least a year after the accident. Don't refer him for revision of the scars for a year or more.

SKIN LINES ON THE FACE

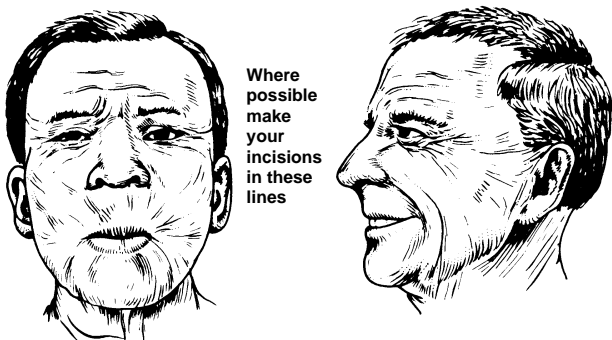


Fig. 61.3: THE SKIN LINES OF THE FACE. The scar on a patient's face will be less obvious if you can make it in or parallel to one of his natural wrinkle lines. These are the lines of election for a scar. With the kind permission of James Smith.

61.2 Injuries of the lips, the gums, and the tongue

When you suture a patient's lip: (1) Try to align the border between the skin and the vermilion part of his lip exactly. If you fail, he will look very ugly. (2) Try to prevent a scar forming, because this may notch the margin of his lip, shorten it, and evert it. Try also to restore his Cupid's bow and his philtral columns. Mark them before you infiltrate or manipulate his wound, and align them with guide sutures before you infiltrate the rest of it.

His tongue can be injured if he is hit on the jaw when his tongue is out, or if he bites his tongue during a convulsion.

INJURIES OF THE LIPS, THE GUMS, AND THE TONGUE

LIP INJURIES

Tears of a patient's lips are often caused by his teeth. If a piece of tooth is missing, feel for it inside his lip. Small tears on the inner surfaces of his lips don't need suturing. Suture larger lacerations in layers. Close his mucosa as a separate layer.

If a laceration crosses his skin-vermilion border, mark it with a felt pen *before* you inject the local anaesthetic because the anaesthetic will blanch it and make accurate alignment difficult. Use the first fine monofilament stitch to draw his skin-vermilion border together, as in D, and E, Fig. 61-4. Traction on this will cause the other structures to fall into line.

INJURIES OF THE LIPS

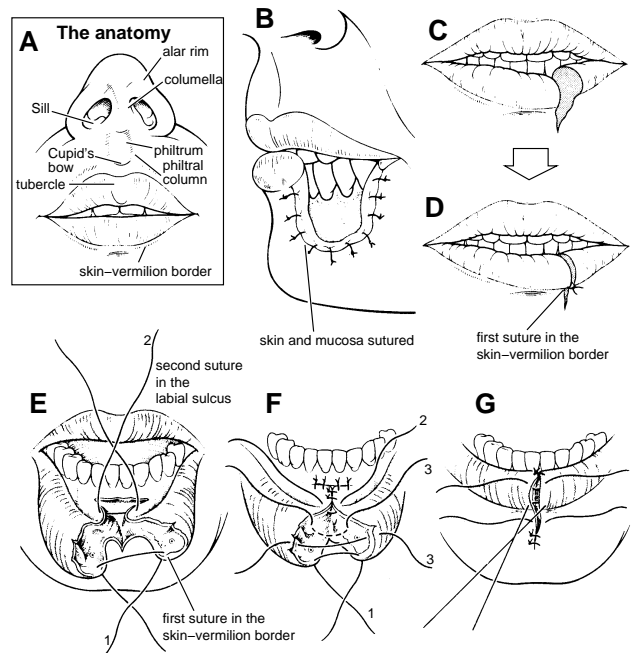


Fig. 61.4: WOUNDS OF THE LIPS. A, shows the anatomy you should try to preserve in a wound of a patient's nose and lips. Try especially to preserve his skin-vermilion border and his philtral columns. B, if a large piece of his lip is missing, suture his skin to his mucosa. C, and D, show the first suture placed in his skin-vermilion border. E, F, and G, show the sequence of steps in repairing a severe laceration of his lip. Note that the first stitch brings his skin-vermilion border together, and the second one is in his labial sulcus. With the kind permission of Peter London.

If a laceration involves his labial sulcus, put your second suture into this, so as to align it. If you don't, it may be obliterated later.

If his orbicularis oris muscle is divided, suture it first with 3/0 catgut. Then bring his skin-vermilion border together. Finally, suture his mucosa with fine catgut.

CAUTION! Preserve the line of his skin-vermilion border.

If up to one quarter of his lip is missing, you can repair it by primary suture without great deformity.

If so much of his lip is missing that you cannot close it by primary repair, suture skin to mucous membrane, as in B Fig. 61-4, and apply a vaseline gauze pack held by adhesive strapping. Refer him.

GUM INJURIES

If a laceration of a patient's gum retracts and exposes the margin of his alveolus, suture it. Dressings are not required. Remove skin sutures on day 4, and sutures in the mucous membrane on day 8.

TONGUE INJURIES

If a laceration does not involve the edge of a patient's tongue, or leave a free flap, you may not need to do anything to it. Otherwise, suture it with catgut. If it is on the tip, suture it using ketamine and suction, or use local anaesthesia. If it is on the dorsum, he may need a general anaesthetic with nasotracheal intubation (A 13.4). Children may need a general anaesthetic.

If the anterior two thirds of an injured tongue bleeds, hold it in a piece of gauze and pinch it between your finger and thumb behind the tear. Put in a mouth gag and repair it with fine silk. If deeper sutures are needed, use catgut.

If the tip of a patient's tongue is almost completely avulsed, try to repair it. It will probably live.

If the posterior third of his tongue is bleeding, put your index finger over it, and press it down against his mandible.

If you cannot reach a severe tongue wound, do a tracheostomy under local anaesthesia. Pack the patient's pharynx and repair his wound with deep stitches.

INJURIES INSIDE THE CHEEK

Repair these with catgut.

61.3 Injuries of the cheek, the facial nerve, and the parotid gland

Deep lacerations of a patient's cheek may cut his facial nerve or his parotid duct, or both. Asymmetry in his smile will tell you that his facial nerve has been cut. Its temporal branch is the most important one because this supplies his eyelids, and division of it may expose his cornea. Division of its marginal mandibular branch will make his lip droop.

The parotid gland and its duct lie more superficially than the facial nerve, and are more easily injured.

STRUCTURES IN THE CHEEK

Repair the patient's muscles of mastication and facial expression with buried chromic catgut.

FACIAL NERVE INJURIES

If the laceration is anterior to a line dropped vertically from the lateral canthus of the patient's eye, only the peripheral branches of his facial nerve can have been injured. Deformity will be minimal and repair impractical.

If major branches of his facial nerve have been cut posterior to the vertical line, explore his wound and try to repair them by the methods in Section 55.9.

PAROTID GLAND INJURIES

If fluid leaks from a posterior wound of a patient's cheek, his parotid gland has been injured. Suture the wound as usual. If a fistulous leak of saliva does develop, it will probably heal spontaneously within a few days, and almost always does so within a month.

PAROTID DUCT INJURIES

If you fail to repair an injury to a patient's parotid duct, he will have a persistent flow of saliva from his cheek. The duct runs under the middle third of a line from the tragus of his ear to the commissure of his lips.

If his parotid duct is injured, repair it with fine silk or catgut over a polythene catheter leading into his mouth and fixed to his buccal mucosa. Pass the catheter, as in B, Fig. 61-5, from his wound, or from the opening of the duct inside his mouth. This is opposite the crown of his second upper molar tooth. Passing the catheter will be easier if you retract his cheek outwards to straighten the duct.

Keep the catheter in place by looping it out of his mouth and taping it to his chin to encourage the flow of saliva. Leave it in for a week.

Alternatively: (1) reimplant the proximal end of the duct through a new opening into his mouth, or (2) tie the duct. This will cause the gland to atrophy.

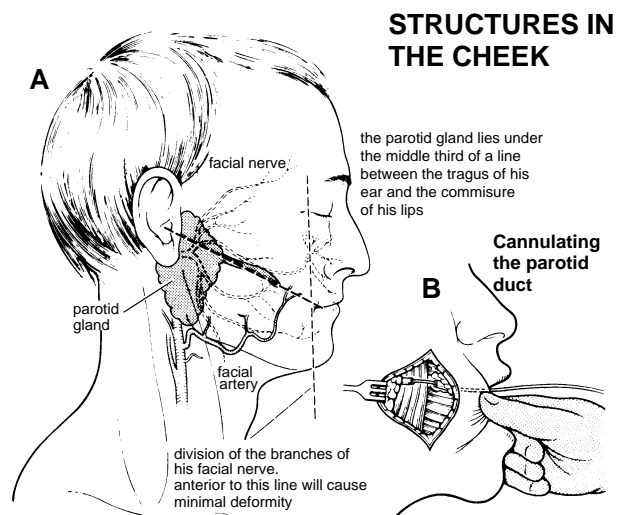


Fig. 61.5: STRUCTURES IN THE CHEEK. If you fail to repair an injury to a patient's parotid duct, a salivary fistula will form. A, the anatomy of his parotid gland, parotid duct, and facial nerve. B, cannulating an injured parotid duct. Partly after Hill, with kind permission.

61.4 Injuries of the ear and the nose

An injured ear has some special problems: (1) It curves in three dimensions and is difficult to repair. (2) Its lacerations are usually jagged and skin or cartilage may be missing. (3) It has an unfortunate tendency to form haematomas which may become organized as a 'cauliflower ear'. (5) Exposed cartilage readily becomes infected causing major deformity. (6) Secondary reconstruction is unsatisfactory and is likely to be impossible, so do what you can when you first see an injured ear. Fortunately, the ear has a good blood supply, so flaps with even a short pedicle will live.

EAR AND NOSE INJURIES

EAR INJURIES

If there is any devitalized skin on the patient's ear, remove it. Don't leave cartilage uncovered! The skin over the ear is not very mobile, so you may have to graft it or excise the injury. Depending on the site, you may be able to remove up to 5 mm without this being noticeable.

If a patient's ear has been incised, insert the first stitch at the edge of the helix. This will avoid a ridge forming which can be very conspicuous when his wound has healed. Then align his antihelix. Try to repair his ear by suturing its perichondrium. If you have to suture the cartilage, use fine monofilament.

If a minor part of a patient's pinna is missing, suture the skin edges together, over the edge of the cartilage. Refer him for a plastic repair later.

If a major part of his pinna is missing, toilet the wound, spread the injured pinna slightly, and suture it in two layers to an incision immediately beneath it in his postauricular scalp, as in A, B, and C, Fig. 61-6. Refer him for a plastic repair later. Alternatively, suture the skin of his ear together over

its cartilage, as in F, and G, in that figure.

If you are worried about the formation of a haematoma, pack his ear with moist cotton wool to maintain its shape, and bandage it firmly.

Leave most wounds exposed, don't dress them. Remove his stitches at 14 days.

If a haematoma forms, with or without a laceration, aspirate it and apply a pressure dressing. If it recurs following aspiration, incise it and insert a short length of rubber band for a drain.

NOSE INJURIES

See also Section 62.4. Try to align the edge of the patient's nose accurately, as in B, Fig. 61-2. Insert the first suture at the edge.

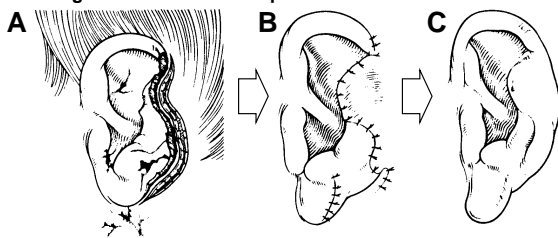
If an injury penetrates all layers of a patient's nose, repair the mucous membrane first using 4/0 catgut. Bring his nasal cartilages together, and try to hold them in place by suturing the skin with fine monofilament.

Only pack his nose if a pack is necessary to hold it in place. Avoid leaving packs in place, if you can.

CAUTION! If he has a septal haematoma, evacuate it immediately through a small mucosal incision. If you fail to do this it will be absorbed, but in doing so, it will destroy his septal cartilage and cause a saddle nose.

EAR INJURIES

Suturing a torn ear to the scalp



Suture a laceration

If tissue is lost

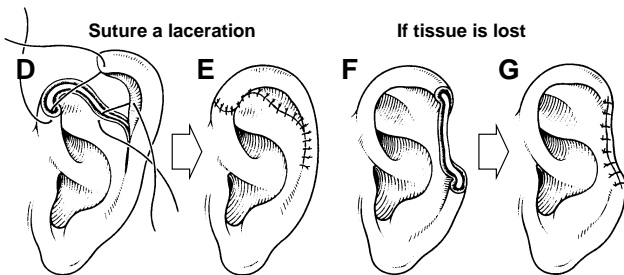


Fig. 61.6: WOUNDS OF THE EARS. A, B, and C, if part of a patient's ear is missing and there is any hope of referring him for plastic surgery later, you can make an incision in his scalp (A), suture his ear to the edges of this incision (B), and refer him for plastic surgery (C). D, and E, when you suture this kind of laceration, put the first suture in the edge of his ear. With the kind permission of Peter London.