



Original article

Dog ear: an overview of causes and treatment

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Dog ear is a term used to describe a characteristic puckering of the skin that can occur after surgical wound closure. Every surgeon practising cutaneous surgery should be conversant with dog ears as they are a common and generally preventable problem. They are significant as they may mar an otherwise excellent aesthetic outcome and may, on occasions, require revisional surgery.

Key words: Dog ear – Surgical technique

The term 'dog ear' is in some ways unsatisfactory: it sounds 'unscientific', particularly if it must be discussed in front of the patient. It does, however, have a certain graphic quality which conveys the nature of the problem extremely well. Alternative terms, such as pucker¹ or tricorne,² that have been suggested over the

years lack this quality, and dog ear has become deeply ingrained in surgical literature.

Structure of a dog ear

Limberg³ described a dog ear as conical deformation of tissue. Borgess⁴ further analysed the shape of a dog ear and described two forms – the standing full cone and lying half cone. In effect, the former is due to an excess of tissue on both margins of a skin excision and the latter due to an excess of tissue on one side alone.

Aetiology of a dog ear

Dog ears are always iatrogenic. They result from closure of a wound following skin excision. The likelihood of a dog ear developing depends on the shape of the defect, the site of the lesion and the elasticity of the skin.

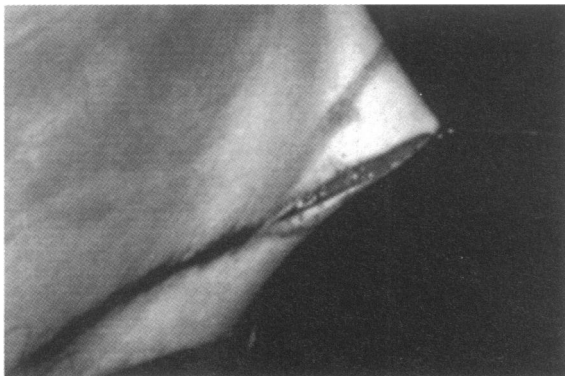


Figure 1

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Figure 2

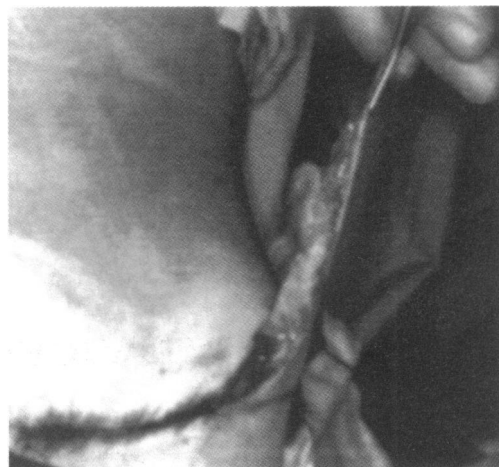


Figure 3



Figure 4

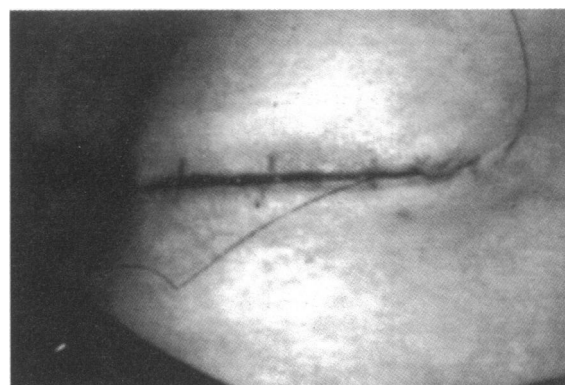


Figure 5

The commonest type of dog ear, the 'standing full cone' (Figs 1 & 6A), results from the fundamental error of failing to plan a long enough ellipse. The wound length:width ratio should not be less than 3:1; ideally even 4:1. Rarely can an ellipse of less than 3:1 be excised without jeopardising the cosmetic result. An extreme example would be where a circular defect is closed directly (effectively an 'ellipse' of 1:1 proportions) where double dog ears are absolutely inevitable. Common sites of dog ear occurrence are: (i) the face, often due to ill-conceived attempts to minimise the cosmetic impact and thereby making too short an incision; (ii) at the ends of long scars that are under tension, particularly reduction mammoplasty and abdominoplasty; and (iii) as an inevitable consequence of rotation flaps.

The less frequently found 'lying half cone' dog ear (Fig. 6A) results from an asymmetric ellipse, where there is a marked discrepancy in the length of one side of an ellipse compared with the other. This puckers up to form a conical excess of skin on one side only of the wound.

Pseudo-dog ear is a term applied to puckering of the skin due to excess subcutaneous fat at the wound rather than actual skin excess. Trimming the fat usually resolves the problem.⁵

Treatment

The treatment of dog ears is straightforward, yet often appears challenging to trainees. The best time to resolve a dog ear is unquestionably at the time of the initial surgery. Frequently they are 'left to settle', a somewhat mythical concept that in practice rarely seems to occur as much as may be desired. Dog ears may prove to be a vexatious issue both to the patient and the doctor and even a source of litigation. It is disappointing, for example, when a patient with an otherwise excellent breast reduction seems only to notice, and be aggrieved by, the dog ear that protrudes visibly from each axilla. The only exception to this rule of treating the problem at source is where the dog ear occurs in relation to a transposition flap, where their excision may jeopardise the flap circulation.⁶

The 'standing full cone' dog ear described above, produced by too short an ellipse, is dealt with by excision. The principle behind excision is in effect to

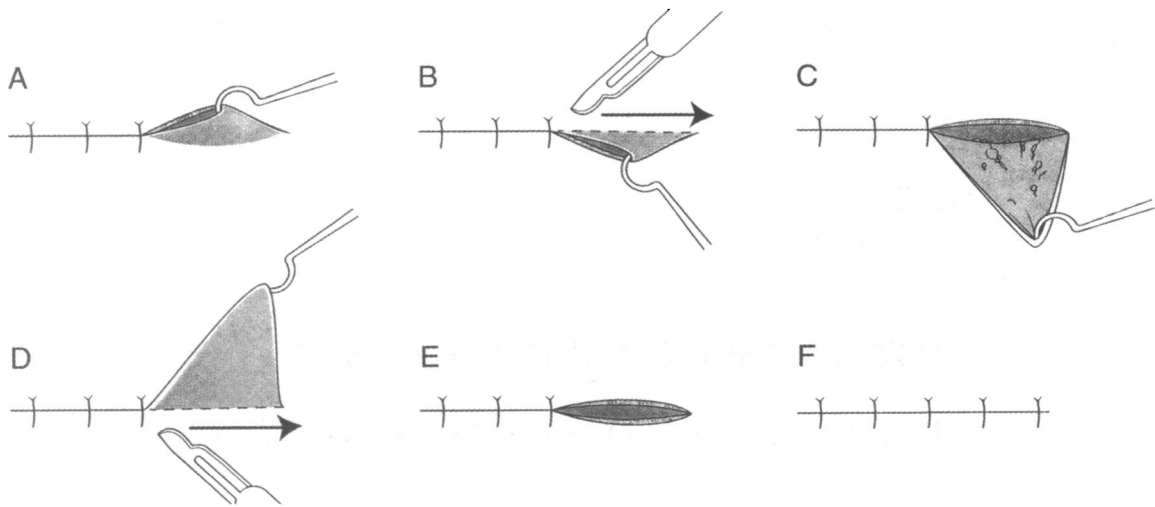


Figure 6

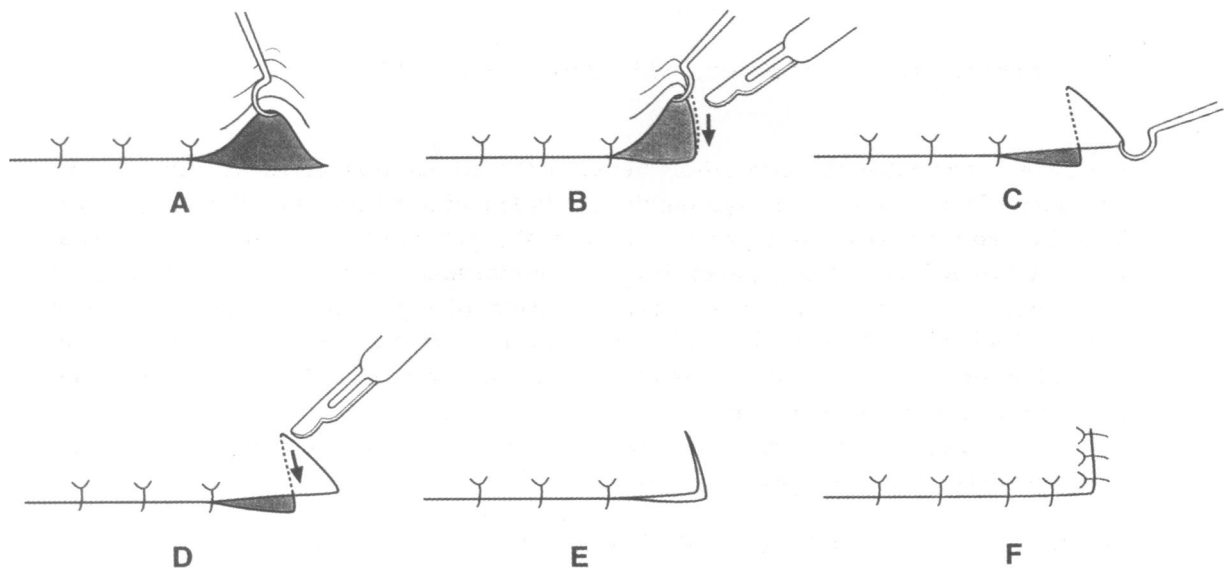


Figure 7

continue the ellipse to the point it would have reached had it been planned better. The apex of the dog ear is elevated with a skin hook. With a pen and ink, a line is drawn along the base on one side. This line is now incised, taking care to blend the incision into the existing suture line and not to create an angle where the new incision meets the previous one. This creates a triangular flap of skin which is then gently pulled over the line of incision. The correct line for excision of the remainder of the ellipse now becomes quite clear as it is overlying the wound edge, and the triangle of skin is excised. This leaves an ellipse which may be closed without tension (Figs 2–6). The procedure for excision of a 'lying half-cone' is virtually identical except that the plane of excision is necessarily at a right angle to the

existing excision line, and the resulting scar will also necessarily be angulated (Fig. 7).

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