has inevitably led to a search for releasing factors which regulate MSH activity. In most mammals the predominant influence on the release of MSH is generally thought to be inhibitory,16 though in man there is little to support this view. Several small peptides with MSH-inhibitory activity have been identified, including a tripeptide (prolyl-leucyl-glycine amide, MIF 1) and tocinic acid, but neither of these substances appears to be active in man; and a pentapeptide has been identified with MSH-releasing activity in some species.16 All these substances are contained within the oxytocin molecule, and there is considerable doubt whether they have a physiological role.16 Other studies have suggested that MSH secretion may be influenced by the pineal or by light, but again there is no evidence that MSH activity is altered by these stimuli in man.17

Major questions about MSH and its regulation have yet to be answered. Possibly, however, 3-MSH (which also has appreciable lipolytic activity) may be an important pigmentary hormone in man, being derived from cleavage of the lipotrophins which act as prohormones.

4 Christe, M, Triangle, 1974, 13, 63.
9 Lohman, P, and Li, S H, Biochimica et Biophysica Acta, 1967, 147, 381.
17 Lancet, 1974, 2, 1235.

Burst abdomen—a preventable condition?

Burst abdomen may seem to the individual surgeon to be a fairly rare event, but recently there were 103 complete disruptions in five years in one London teaching hospital.1 The present-day incidence among patients who have a vertical abdominal incision probably lies3 between 1% and 3%, and the mortality4 may be as high as 35% to 40%. The surgeon who strives to keep his mortality for planned gastric or colonic operations5 at or below 1%, must therefore study and prevent abdominal incisional disruption.

The principal features of the burst abdomen have been known for a long time. It occurs mostly in midline and paramedian incisions, often those that have become septic, and the trial of postoperative cough, vomiting, and abdominal distension is the precipitating factor in over 90% of bursts.7 Until recently most reports concluded that disruption was a regrettable but inevitable event in a proportion of operations. This defeatist attitude was based on the belief that different methods of closure did not affect the incidence of bursting. In 1955, however, disintegration of the catgut was found to have occurred in 15 out of 18 burst abdomens examined,8 and the unreliability of catgut was confirmed by the finding that chromicised catgut used to close abdominal incisions broke from the sixth day after insertion.9 Any remaining support for catgut must have collapsed after the recent report of 107 paramedian incisions closed in layers with No 1 chromic catgut which resulted in 11 bursts and five deaths.9

The reason for this high incidence of burst incisions is that catgut does not retain its tensile strength long enough for the relatively avascular linea alba or rectus sheath to heal strongly. The logical answer must therefore be to support the incision with unabsorbable sutures for a longer time. Some surgeons have done this by inserting stout retention sutures, usually of nylon, through all layers of the wound and leaving them in position for at least 14 days before removal. This technique certainly reduces the disruption rate even when catgut is still used for closure,1 and in New York 1129 consecutive incisions were closed in this way with only one disruption.10

The other approach is to use a non-absorbable suture for closure of the wound, and since the development of synthetic monofilament sutures this has become an increasingly popular method. Babcock11 suggested this technique in 1935, and it was developed in Cleveland12 and later in London13 using stainless steel wire and resulting in virtual abolition of wound disruption in 2500 closures. Wire is not the easiest of sutures to use, and recently monofilament polyethylene has become popular because it is strong and handles well, slides easily through delicate tissue, knots securely, produces virtually no reaction in the tissues and rarely causes a sinus, even in septic wounds, provided care is taken to bury knots.

The main debate now centres on whether these synthetic monofilament sutures (some still prefer nylon) should be used to repair vertical incisions in layers or in mass one-layer closure as originally suggested by Smed.12 If, as seems reasonable, paramedian incisions are closed in layers with a continuous monofilament suture, then recent work14 suggests that it is important to take fairly large bites of tissue, to allow for postoperative dissection by not pulling the suture up tightly, and to remember that a continuous evertting mattress suture is much stronger than over-and-over suturing in a vertical abdominal incision.15 One layer mass suture is specially suited to the closure of midline incisions and gives good results with both continuous16 and interrupted17 sutures.

The application of these methods has already resulted in the virtual disappearance of burst abdomen from many surgical units. They consume neither extra money nor time, so that this alarming and dangerous complication should now become a real rarity.

12 Jones, T E, Newell, E T, and Brubaker, R E, Surgery, Gynecology and Obstetrics, 1941, 72, 1096.