work of Allen and Koch (1942) and Siler (1942) has been especially convincing, and their results compel a trial of their methods.

A modification of this form of treatment has been employed in 10 consecutive admissions to a general hospital. The modification advocated is the use of an occlusive dressing medicated with sulphanilamide through which the burned area may be easily inspected. This is achieved by the use of "cellophane" and unguentum sulphanilamidi. The number of cases is unfortunately very small, and there has been no investigation of the blood chemistry or viscosity in the cases studied. All the burns were of the second degree, the average stay in hospital was about 21 days, and all the patients returned to duty. The results have been so uniformly successful that it is thought that a description of this form of treatment will be of value, especially now when the transportation of burned Service personnel presents such problems in the prevention of shock and infection. The use of "cellophane" as a splint for Thiersch grafts has been described by Poth (1942); Ellis (1943) recommends using this material as a dressing for tropical ulcer; but in the literature at my disposal it has not been mentioned as a dressing for burns.

Local Treatment of the Burned Area

Using general anaesthesia, the intact skin surrounding the burned area is thoroughly cleaned with white soap and water, and then the toilet of the actual burned area is meticulously carried out. The importance of gentleness and the use of normal saline in irrigating the burned area has been sufficiently stressed in the original papers, but it is well always to remember that "in any burn the vascular bed of the area has been seriously affected."

The medicated sheets of "cellophane" are then applied so that each overlaps the other for about an inch. These sheets adhere to one another and to the intact skin, and the entire burn is embraced in an envelope that permits of easy inspection and prevents contamination. Next, perforated oiled silk is wrapped around the "cellophane." This is not essential, but does help to prevent the wool (which is what we have had to use for compression) from adhering to the dressing and tearing it when removed. The use of sea sponges for compression would probably make such a precaution unnecessary. A firm bandage completes the dressing. After 48 hours the burn is inspected. The "cellophane" may be in some parts blistered by collections of serum. Any such bullae are trimmed away with scissors, and the area affected gently cleaned with saline swabs and another sheet of "cellophane" applied. This transparent dressing adheres lightly to healed burned areas, but if carefully removed does not damage the delicate new epithelium. However, no attempt at removal should be made until it begins to separate itself. The "cellophane" does not adhere to the unhealed areas, so that damage to the tissue, if the dressing must be changed, is minimal.

If the case is received so late that the burn is already frankly infected, a nicety of surgical judgment is demanded. One may try to convert an infected wound into a relatively clean one by prolonged and gentle irrigation (Bisgard *et al.*, 1942) and then rely on the bacteriostatic action of the sulphanilamide to keep the burn clean. Or saline compresses or a Bunyan-Stannard envelope (if available) may be used for 48 hours and the burn then again closed in the "cellophane" envelope.

Some of the patients in this series have arrived many hours after the burn was received and after a prolonged journey in a motor-lorry. In such cases I have usually applied the "cellophane" for 48 hours to avoid the trauma and distress of frequent dressings in an already exhausted patient. If on inspection there is a collection of pus in any one part, the overlying dressing is cut away and saline compresses are applied. The "cellophane" in the uncontaminated areas is left undisturbed and is in no way harmed or made soggy. Usually after 24 or 48 hours these infected areas are clean enough for the "cellophane" to be reapplied, and healing then occurs uneventfully.

Preparation of the Dressings

The "cellophane" sheets may be medicated, sterilized, and stored for immediate use when needed, or the unguentum

sulphanilamidi (sulphathiazole has not been available to me) may be spread on the sterile sheets of "cellophane" just before their application. All types of transparent wood-pulp tissue have been used, and have all been salvage. The paper is sterilized by first dusting with talc and then autoclaving for 20 minutes at 15 lb. The talc is then dusted off and the "cellophane" is placed flat on a sterile towel and a thin layer of unguentum sulphanilamidi 10% is spread on. It is then folded four times, with the non-medicated surface to the outside. Several such pieces are sealed in a conveniently sized tin and are always available for immediate use.

First-aid Measure

It is suggested that the application of a powdered sulphamide to the burn or wound, followed by the immediate application of "cellophane" sterilized by boiling, offers many advantages. It permits of easy and painless inspection of the burn when the patient reaches the centre and the ultimate treatment has to be decided, and does not in any way prejudice the form of treatment to be adopted. It would prevent contamination and be bacteriostatic to infection already present in the burn. A dressing of this type is available almost anywhere.

An even more simple measure which could be applied in very forward areas when no medical equipment is available should be considered. In such circumstances the "cellophane" wrapping of a cigarette package could be applied to the burn, for its inner surface is almost certainly sterile; such a dressing would be comfortable and adequate until the patient was able to receive further treatment.

The satisfactory results achieved in this series were, as stated, all in second-degree burns. In third-degree burns, as always, treatment should be directed to preparing the burned area for skin-grafting, and the dressing would be of temporary value only.

This paper is published with the kind permission of my officer commanding, Col. David Bell, O.B.E., E.A.A.M.C.

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SYMPTOMLESS ENLARGEMENT OF THE OESOPHAGUS

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Many cases of enlargement of the oesophagus are on record, but these have all been associated with symptoms which led directly to the investigation of the oesophagus. The condition occurs over a wide range of age groups, and is believed to be secondary to achalasia of the cardia or to organic obstruction of the lower end of the oesophagus. In the case now to be described there were no symptoms, and the condition was discovered as a result of the usual routine examination of the chest.

Case History

A commercial traveller aged 57 was admitted to hospital on Aug. 29, 1941, complaining of pain in the joints; a diagnosis of rheumatoid arthritis was made. He did not complain of gastro-intestinal symptoms and had never had dysphagia, unexplained vomiting, regurgitation of food, or pain behind the xiphoid. There were no respiratory symptoms and he had not lost weight.

On examination of the chest the only abnormality found anteriorly was slightly increased vocal resonance in the right midzone. Posteriorly, abnormal signs were confined to the right base, where vocal fremitus was lessened, the percussion note impaired, breath sounds vesicular but diminished in intensity, and vocal resonance reduced. Movements of both sides of the chest were equal and there was no evidence of displacement of the mediastinum. The blood pressure was 118/68.

A plain radiograph of the lung fields showed a triangular shadow extending to the right of the right border of the sternum from above the level of the aortic knuckle to the convexity of the right dome of the diaphragm. A barium swallow revealed a grossly enlarged oesophagus (see Fig.). The shape of the lower end of the organ

could be seen only in an oblique view. The oesophagus was grossly elongated so that it was obliged to kink, the kink resting on the right cupola of the diaphragm. The terminal portion of the tube narrowed gradually to pass to the cardia by a fairly narrow channel which appeared to offer considerable resistance to the passage of barium. Three-quarters of a cupful of barium emulsion passed into the stomach within 30 minutes, and peristaltic waves were observed emptying emulsion from the oesophagus into the stomach. In an hour a trace of barium remained in the lower end of the oesophagus.

The radiological appearances did not alter over a period of 15 months, and now, two years after the condition was diagnosed, the patient is symptom-free. A barium follow-through showed no abnormality of the stomach or colon (cf. Etzel, 1937).

Discussion

Cases of dilated oesophagus described in the literature have usually been associated with achalasia of the cardia, a condition thought by Hurst (Hurst, 1914-15; Hurst and Rake, 1929-30), and also Rolleston (1896), to be due to an upset in the neuromuscular mechanism in the region of the cardia. Hurst visualized food being propelled down the oesophagus to be held up at the cardia, which did not relax. In consequence the oesophagus dilated to accommodate the food, and in time this resulted in a permanent dilatation of the organ. There was no question of paralytic dilatation, because violent, frequent, and ineffectual peristaltic movements were observed in the oesophagus.

All cases of achalasia of the cardia which have been examined histologically have shown inflammatory changes and fibrosis affecting the ganglion cells of Auerbach's plexus (Rake, 1927; and others). Many cases of achalasia are on record in which no histological examinations have been reported; but they are all cases which showed symptoms of obstruction, and there is no good reason to separate them from the above group.

It has been assumed hitherto that dilatation of the oesophagus in these cases was a consequence of the functional defect at the cardia, supporting evidence being some diminution in size following surgical relief of the functional obstruction. There is no record of an oesophagus normal in size before the onset of symptoms. This point is important because of the present case.

Apart from those cases with marked symptoms in which the diagnosis seemed probable on clinical examination alone, cases have been described with slight symptoms of obstruction but with well-marked radiographic changes (Shelburne, 1934; Belot and Nahan, 1936; Becquet, 1938); and a similar condition in children may be associated with considerable oesophageal dilatation (Rolleston, 1896; Cameron, 1927; Negus, 1936). Besides, there appears to be no direct relationship between the degree

of obstruction and the extent of oesophageal dilatation (Brown Kelly, 1912), and oesophageal stenosis due to a neoplasm or fibrous stricture may not be associated with gross dilatation.

In the case here described there is delay in the emptying of the oesophagus, but some barium entered the stomach very rapidly and each peristaltic wave was associated with the passage of barium. The degree of achalasia, if any exists, must be minimal; more probably the delay should be attributed to the tortuous course followed by the oesophagus.

In the absence of histological material for study it is difficult to assign this case to a definite group, but it differs from what has been described as achalasia of the cardia, in the absence of symptoms, the absence of any evidence of spasm, and the abnormal shape and length of the oesophagus. It is difficult to make a reasonable suggestion as to its cause unless the issue be evaded by ascribing it to a "congenital defect." Experimental evidence which might have a bearing on the aetiology of this condition is meagre, but the following observations should be mentioned:

(a) McCarrison (1919) has described the effects of chronic hypovitaminosis-B on pigeons. The changes in Auerbach's plexus resemble those found in achalasia. The state of vitamin-B saturation of this patient has not been determined, but he exhibited no signs of vitamin-B lack.

(b) Experimentally, in animals, bilateral vagotomy led only to a transitory absence of peristalsis (and hence delayed emptying) in the oesophagus (Cannon, 1906-7), but when the longitudinal muscle coat was stripped from the subdiaphragmatic portion enlargement of the oesophagus resulted (cf. Netto and Etzel, 1934). The latter operation always resulted in the simultaneous removal of Auerbach's plexus, thus providing some direct evidence that enlargement of the oesophagus can follow damage to this plexus.

The cause of the oesophageal enlargement in this case is therefore obscure; there is no direct evidence as to its aetiology, but a congenital defect of the longitudinal muscle fibres is possible.

I am indebted to Prof. R. V. Christie for permission to publish this case, and for his helpful criticisms of this paper.

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Medical Memoranda

Alternative Method of Treatment for Late Cases of Strangulated Femoral Hernia

Owing to the very high mortality associated with late cases of strangulated femoral hernia it is of interest to describe an alternative treatment which has proved successful. While not in any way decrying the standard treatment, there are no doubt many late cases to which the technique to be described could be applied. These patients are very dehydrated and exhausted; therefore it is essential to keep to the minimum the amount of manipulation at any one time.

CASE RECORD

Mrs. A., aged 69, was admitted to hospital with a 5-day history of abdominal pain, vomiting, and increasing distension. Just before the onset of her symptoms a lump had appeared in the right groin, following a strain. On examination the patient looked very ill; temperature 99.8° F., pulse 110. Her face was ashen and appeared sunken, her tongue was dry and furred, and she was obviously very dehydrated. She complained greatly of thirst, and her mind seemed to be rather confused. There had been no action of the bowels for seven days. Examination of the abdomen revealed marked distension, with a large red tender swelling in the right groin, no doubt containing sloughing bowel and pus. Intravenous saline was begun immediately and the patient brought to the operating theatre. Under pentothal anaesthesia a small median subumbilical incision was