commend themselves to their local colleagues in a consultant capacity. The details of the outfit can be elaborated or amended according to the wishes of those who use it.

I feel convinced that a modified outfit should be at the disposal of every doctor and midwife, to make good the deficiencies of many industrial homes. Some emergencies are preventable, and will tend to be eliminated by the improved standard of medical and nursing supervision which is being developed and by the closer co-operation which will result between the two services.

Outfit for the Emergency Service

This outfit is contained in (i) a bundle, (ii) a square case, (iii) a drum, and (iv) oddments.

Bundle (weight 2½ lb., measurements 20 × 10 × 10 in.):

2 brown blankets	Bed-pan
2 sheets	Rectal saline apparatus
4 hot-water bottles	Tin containing 1 oz. glucose
2 mackintoshes (1 sheet, 1 apron)	

Square case (weight 27 lb., measurements 20 × 10 × 10 in.):

2-pint measure	Sims's speculum
1 small and 2 large basins	Catgut
Obstetric straps	Silkworm-gut
Flask of sterile water	Rubber catheter
Saline tablets	Dettol
Lotion thermometer	Pituitary
2 sterile dressing towels	Erbolin
and mackintosh	Morphine, digitalis, strychnine,
1 hand towel	lobeline
1 pair of sterile gloves	Atropine
1 bag of sterile swabs	Brandy
2 pairs dissecting forceps	Adrenaline
6 pairs artery forceps	Camphor in oil
3 scalpels	Tinct. iodine
Needles	Spirit soap
Aneurysm needle	Anaesthetic mask
Scissors	Methylated spirit
Kidney dish	Coramine
Nail-brush	Minim measure
Intravenous saline apparatus	2 oz. measure
Intra-uterine douche apparatus	Novocain
with Bozeman's nozzle	Chloroform
Hypodermic syringe	Ether
10 c.cm. Record syringe	Drop corks

Drum (weight 12 lb., height 10½ in., circumference 32½ in.):

Wool	2 sterile gowns
Gauze (2 rolls)	2 sterile masks
Lint	Doctor's hand towel
Gloves (2 pairs)	4 dressing towels

Oddments:

Oxygen cylinder with tubing and funnel	Flask of gum saline
	CO ₂ apparatus for babies

SEPTAL DEFLECTION*

BY

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I have for some time had an uneasy feeling that there is a tendency to blame this deformity for many more ills than it deserves and consequently to employ operative correction much more often than is actually necessary. Let me admit at once that there are many reasons for this. A twisted septum is a definite, quickly seen abnormality and a handy explanation of many ills of obscure origin. The operation of submucous resection is a pleasant and straightforward one—being, in fact, the favourite operation of many specialists. It does not cause extreme discomfort for the patient; and, if performed with care according to reliable technique, does not result in any lasting harm. So that even in the case of the most careful and scrupulous among us a septum bent or a little to one side is sometimes an undisguised blessing.

* Read in the Section of Oto-Rhino-Laryngology at the Annual Meeting of the British Medical Association, Plymouth, 1938.

This paper is based on an investigation of a series of cases in which a diagnosis of septal deflection was made by various examiners. The frequency with which deflection occurs to a varying degree with or without ill effect would suggest that it is not the condition of the septum which causes disease but the liability to congestive and infective processes in the presence of a narrowed airway. How often are we right in assuming that this irregularity in development requires to be changed artificially by operation? And are we not too frequently apt to forget the compensatory character of Nature? It is often only during a routine examination of the nose that a septal deflection is discovered with no associated complaints of obstructed breathing, headache, catarrh, etc. This state exists in many cases with very severe deviation. Other factors must therefore be present to give rise to the conditions commonly credited to a septal deflection. With regard to its frequency, are we right in saying that because the nasal septum is not exactly in the middle line it is abnormal? At any rate in European skulls and on clinical examination it would seem to be more the rule than the exception, the percentage being variously quoted as between 60 and 80. It has been seen in infants of a few weeks old, occurring more often in males than in females and slightly more to the left than to the right. For some reason it is the exception in aboriginal skulls: is this because of a purity of racial development, whereas through the ages many races have combined to give the European his ultimate size and shape? The majority of septal deviations are not associated with disease or discomfort.

The Role of Trauma

With regard to the origin of septal deviation, few of the patients examined in this investigation can recall an injury likely to have been the cause. Opinions differ very greatly as to the part played by trauma; some say it is the common cause, others that it is the exception. It certainly seems possible for many injuries to the nose to occur in early childhood—as in falling, for example—that would not be recollected in adult life. Such injuries may twist the cartilage without external change; and, in fact, traumatic changes will be found mostly in the cartilage. Although it is impossible to say how far injury has influenced the development, there remain, I think, a majority of cases in which the origin would seem to be developmental. And why not? Should the septum be the one structure to be absolutely straight and in the dead centre? Superficial examination, even a casual glance, will show that none of us has two equal sides to the face. It is interesting to note, on radiographing the skull, how often a difference in size exists and how often a septum is deflected to the smaller side. The nasal cavity, turbinates, and sinuses are frequently noticeably smaller on the convex than on the concave side. It does not necessarily follow, because of the high percentage of septal deviations, that there is a perceptible difference between traumatic and non-traumatic causes in this regard. Acceptable suggestions as to the cause include defective development of the septum itself and its upper and lower boundaries. This would occur with the high palate so common as the result of adenoids, with an abnormally low cribriform plate and flat nasal bridge, and is even more likely still when both these conditions exist.

Effects of Septal Deflection

Unless so great as to be noticeable externally, a septal deviation attracts attention by interfering with breathing and the drainage of the nasal cavity and sinuses. Middle-

ear and tubal conditions, especially catarrhal ones, are found with great frequency in association with septal deviation, but the suggestion is made that these are most commonly seen after the establishment of sinus disease. When severe it may cause pain by pressing on the lateral nasal wall. The blockage of sinus drainage is by far the most troublesome effect and the one calling most persistently for relief. In these cases the septal deflection is commonly most acute high up, and many, probably the majority, are the result of injury. Is there any difference between the effect of a sudden change of the size and shape of the nasal cavity by traumatic deviation of the septum and the result of a septum deflected during development? It seems reasonable to suppose that, given equal conditions of infection, the case with a traumatic deviation of the septum will be likely to have more trouble from a sinusitis than the developmental case or the case of long standing. In the former there is not only the effect of the trauma but also the larger turbinates. In the latter there has been an accommodation of structures and functions to meet the irregularities, as, for example, the shrinking or the smaller development of turbinates. Why does a septal deflection produce a greater liability to disease? A sudden traumatic change in aeration and drainage is understandable as a cause of trouble; but, in regard to other bodily aberrations, are the parts concerned more susceptible to bodily disease than those absolutely normal? If so, and if the septal deflection is looked upon as an abnormality, then those liable to disease from this cause are in the majority. There certainly seems to be a tendency for diseased conditions such as sinusitis to be found more often on the side of the septal deflection. Is this definitely due to the presence of the septal deflection, or does the septal deflection not rather make drainage difficult and so the relief of disease and symptoms? Is not sinus disease, at first, part of an ordinary rhinitis, showing itself as an entity only when the resolution does not progress, as in the nasal cavity itself? In those cases of septal deflection with no symptoms Nature has made compensation for the difference in size of the two nasal cavities—for example, the larger inferior turbinate on the concave side. The position of the septum does not seem to have any pathogenic effect: its action is purely physical, and is shown after the onset of disease, especially by interfering with efficient drainage of sinuses.

Grounds for Operation

It is interesting to wonder on what grounds we should perform submucous resection of the septum. I suppose most of us would agree that a badly deflected septum obviously obstructing breathing to the patient's discomfort, a similar septum preventing the drainage of sinuses and impeding the return of the patient to good health, or a septum by its pressure on opposing surfaces causing acute pain, are all circumstances warranting procedures for moving the septum out of the way. Most of us would agree that the operation of submucous resection in one form or another is best suited to this purpose. Attention to the septum in this way will reduce the necessity for turbinotomy to a minimum. Apart, however, from these more insistent conditions, many minor disorders of the nose and its vicinity are found in conjunction with a septal deflection where the question of operating on the septum also frequently arises. Possibly in this group of cases our tendency is to interfere too often with the septum, and it is, I think, here that the results of such interference do not seem to favour it. The results, at

any rate in some hands, are disappointing, and, I believe, for at least two reasons. First, the psychological one—both for ourselves and for our patient—that, although generally no harm is done, our surgical procedure has not removed the original disorder. Secondly, that owing to the presence of so definite a condition as a septal deviation many minor but more persistent disorders escape our notice. Even although so many deflections produce no symptoms, can we, with one such individual, ever be right in advising the straightening of the septum as a preventive of serious disease in view of the ever-present possibility of nasal infection; or should we rather wait for the acute symptoms to arise and then do our submucous resection in case trouble should arise again? This is an age of prevention in medicine, but I think there will be few among us who would be willing to go to these extreme lengths “just in case.”

CALCIUM MANDELATE AND SULPHANILAMIDE IN TREATMENT OF URINARY INFECTIONS

BY

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Mandelic acid has its well-defined indications in the treatment of urinary infections. It is most efficacious against *B. coli* and enterococci, but usually fails in *B. proteus* and staphylococcal infections. Schnohr (1937), Hryntschak (1937), Melton and Rosenheim (1938), and Kunstmann (1938) report series of cases treated with the calcium salt of mandelic acid. This salt is an insoluble tasteless powder which does not mix with water and can be given with milk or jam. Calcium mandelate is marketed by British Drug Houses as mandecal, and this was the preparation used in the present series of tests.

Recently the group of compounds of which sulphonamide, prontosil, and streptocide are the best-known members has been used extensively in the treatment of urinary infections (Garrod, 1938; Cokkinis, 1938). To compare the efficacy of calcium mandelate with the sulphonamide group of urinary antiseptics we took two series of cases of urinary infections and tried to treat each series, according to indications set out below, with the respective drug.

Indications for the Use of Mandecal.—Mandecal has the same indications as all the other mandelates. The renal function should be good, so that the urine may speedily attain a pH of 5.5 or less. Mandecal is most effective against *B. coli*.

Indications for the Use of Sulphanilamide.—Sulphanilamide exerts its bacteriostatic action best in an alkaline medium. The kidney function may be good or moderately impaired. It is equally effective against *B. coli*, haemolytic streptococci, and *B. proteus*. It does not act on enterococci.

Two questions arise: Which drug fulfils the optimal requirements in sterilizing the urine in the shortest time, with the least amount of toxicity, in a given infection? and Which treatment is the cheaper?

1. Mandecal

Mandecal was found to acidify the urine of healthy individuals very quickly. In a self experiment the urine became strongly acid within eighty minutes of the in-