Current Practice

NEW APPLIANCES

Suction Apparatus for Ambulances

Mr. A. M. MURRAY, casualty surgeon, Glasgow Royal Infirmary, writes: There is a need for a simple, reliable, easily operated, and instantly available suction apparatus as a permanent fitting in ambulance vehicles. I have designed such a system with the use of the vacuum created in the intake manifold of the petrol engine.

Through the courtesy and co-operation of the St. Andrew's and Red Cross Scottish Ambulance Service and its senior officers, an ambulance was provided for experimental work. By tapping the manifold and fitting a vacuum tank incorporating a non-return valve to the chassis it was found to be possible to store an efficient working vacuum. Rubber vacuum hose of $\frac{1}{2}$ in. (1.3 cm.) internal bore, interrupted at the floor of the patient compartment by a simple off/on valve, was used to connect the tank to the suction controller head. The design and fitting of the vehicle components, all of which were standard parts, was carried out by Mr. James Logan, of Messrs. Rossleigh Ltd., Motor Engineers, Glasgow. The suction controller fitted inside the patient compartment of the vehicle (see illustration) was manufactured by Messrs. Edwards High Vacuum Ltd., Crawley, Sussex, to my specifications. This is a simplified version of

their standard hospital equipment. The vacuum gauge normally fitted to the controller head was retained.

At trials of the apparatus with normal engine running a vacuum of 20 to 24 in. (50 to 60 cm.) Hg was maintained in the storage tank. A vacuum gauge fitted to the instrument panel was found useful for the driver's information and guidance. The valves in the system were fitted to the air-suction lines rather than to the aspiration tubes, in order to avoid their contamination and soiling by aspirate. With the control valves fully open, and using a No. 15 Franklin whistle-tipped catheter as the patient suction tube, it was possible to have effective suction for 50 seconds with the engine switched off; the stored vacuum was exhausted in that time. With the engine running and the valves fully open a constant working vacuum of 10 to 12 in. (25 to 30 cm.) Hg was obtained. This produced a high-flow suction capable of lifting 1 litre of water from the floor of the vehicle into the glass suction container in 15 seconds. Viscid material (K-Y jelly) used to simulate respiratory secretions was also readily evacuated into the suction jar.

In a diesel engine, where a readily tapped vacuum is not available, a small standard rotary exhaustor driven from the fan-belt is

easily fitted and creates an effective vacuum in the storage tank.

I believe that general adoption and fitting of such a simple system to ambulances used for emergency work would be of great advantage, and on occasion might well be life-saving. Once fitted, the running cost of this system would be negligible.

ANY QUESTIONS?

We publish below a selection of questions and answers of general interest.

Promoting Growth in Adolescents

Q.—Is hormone or other drug therapy of any value in promoting growth in adolescents?

A.—It is difficult to give a dogmatic answer without knowing the cause of the failure to grow in height. If the patient's height is below the third percentile for his age and sex he should be investigated in an attempt to discover the cause. In the rare case of anterior-pituitary deficiency human growth hormone will promote growth. In hypothyroidism thyroxine will be effective.

Protein anabolic drugs, such as methandienone and norethandrolone, have been widely used in the treatment of children with constitutional slow growth associated with delayed adolescence. These agents are weak androgens; unfortunately they accelerate skeletal maturation even more than growth in height, and there is at present no convincing evidence that they will increase the ultimate height. Nevertheless, when a late maturing

boy of short stature becomes self-conscious about his appearance one of these protein anabolizers may be given a trial under careful supervision, including regular radiological assessment of skeletal maturation.

Treatment of Vitiligo

Q.—What is the treatment for vitiligo?

A.—Electron microscopy has confirmed that although melanocytes are present in normal numbers in patches of vitiligo the precursors of melanin granules (premelanosomes) fail to develop into the final pigmented stage. The cause of vitiligo is still unknown,¹ but appears to be a genetically determined variable inhibition of the tyrosinase system.

Though far from satisfactory, psoralens combined with sunlight (or artificial sources of ultra-violet irradiation) affect vitiligo but not without producing marked inflammation.

New pigment usually appears in irregular punctate distribution starting about hair follicles. Complete cures of vitiligo are uncommon, but therapists with extensive experience have stated that at least 50% of affected patients are significantly improved. Useful references with detailed descriptions of the technique and results of this method are Becker² and Desai.³

REFERENCES

- ¹ Pinkus, H., *J. invest. Derm.*, 1959, **32**, 281.
- ² Becker, S. W., *J. Amer. med. Ass.*, 1960, **173**, 1483.
- ³ Desai, Sh. C., *Hautarzt*, 1958, **9**, 542.

Alopecia Totalis

Q.—A woman aged 39 developed alopecia totalis after the loss of two children. When she became pregnant again the hair began to grow and by the end of pregnancy recovery was almost complete. After delivery she again lost all her hair. What could be the explanation of this, and would it indicate some form of hormonal therapy?

A.—The aetiology of alopecia areata or totalis is still unknown. It is usually