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Wheel Chairs

SIR,—Why in this age of space travel can we not design a reasonably efficient wheel chair? No maker of a perambulator would dare to employ the kind of engineering the disabled have to put up with.

One of my patients who has multiple sclerosis bought an electric wheel chair for £180 and is horrified by its performance. Most of her criticisms apply not only to the make in question but to most British wheel chairs, including the N.H.S. models. The full list is far longer than you could allow me space for, but here are some of the principal points.

(1) The castors should be at the back rather than in front so as to facilitate steering. This is particularly important on electric chairs steered by differential drive-wheel speeds.

(2) Most ordinary armchairs are upholstered and sprung and recline at an ergonomically sound angle. But invalids who have to sit all day long are expected to do so on a piece of plastic slung over a straight-backed steel frame.

(3) Footrests are insufficiently adjustable and make the chair too long for easy manoeuvre; they should slide back rather than swivel.

(4) The electric chair has no brakes at all. The N.H.S. chair has brakes inaccessible to a person pushing it.

(5) Bicycle wheels are all very nice but they take up space unnecessarily and have

hubs that stick out 2 in. (5 cm.) and catch every door post. Smaller wheels could be tucked under the chair.

(6) In this age of transistors the electric controls are of the crudest contact type. They invariably stick, causing the chair to go berserk from time to time. The battery leads have undersized pins and plug in from underneath, so that they constantly fall out.

(7) The batteries are mounted behind, adding a foot (30 cm.) to the overall length and making it difficult to pull up the patient from the back. They should be underneath the chair.

I appreciate that a fair amount of development may be needed to produce a better chair. Surely this could be done more easily by the Government than by the half dozen small manufacturers who are at present dabbling in this field. It will also be necessary to make rather less use of standard components where they are utterly unsuited to their purpose. But surely, if we can give the disabled a motorized tricycle costing some £500, we can as an alternative equip them with a really comfortable electric wheel chair for much less than that sum. Perhaps it is time for doctors and engineers to get together with the patients themselves to solve this problem.—I am, etc.,

Caterham,
Surrey.

K. R. HEBER.

A Vagal Paradox

SIR,—I am prompted to write this letter at a time when vagotomy is being advocated by some surgeons in the treatment of benign gastric ulcer, for it is often thought that the operation cannot sensibly be used

for a disease not associated with a high fasting acid. This, however, is untrue, for vagotomy cures duodenal ulceration in patients without a high acid secretion and cures gastric ulcer in the absence of free

hydrochloric acid in the fasting juice and a small response to histamine. This is an important "vagal paradox" which we should recognize.

A woman aged 58 had suffered for many years from recurrent attacks of epigastric pain associated with vomiting of food. She had been investigated repeatedly and no satisfactory diagnosis had been made. For many years repeated barium studies had failed to show either duodenal or gastric ulceration and a diagnosis of chronic duodenal ileus had been made. The symptomatology was typical of pyloric channel disease, the clinical aspects of which were so well described by Butsch¹ more than 30 years ago. In 1961 x-ray examination of this patient showed a small ulcer crater apparently exactly on the pylorus. There was no free acid in the fasting juice and the response to histamine was 3.5 mEq/hour. At that time there was no radiological evidence of gastric retention. At operation the duodenum was normal as was the stomach and too the pylorus on external examination. When the pyloroplasty incision was made the small ulcer shown on the x-ray film was seen exactly on the posterior wall of the ring. This ulcer from its position and secretory pattern was gastric rather than duodenal and gastric resection seemed to be the correct operation. However, the patient was already a very thin woman who could ill afford to lose more weight. I had not then come to use vagotomy for gastric ulceration but felt that this ulcer on the pyloric ring would be cured by vagal section in spite of the acid findings. A bilateral selective vagotomy was, therefore, added to the pyloroplasty and completeness of nerve section was proved by the electrical stimulation test. This patient has remained entirely symptom-free for the last nine years.

Now we know that pyloric channel disease with its prepyloric and pyloric

gastritis may be associated with an ulcer crater on the pyloric ring or in the prepyloric stomach. It is cured by vagal section yet the disease is commonly associated with absent free hydrochloric acid in the fasting juice and a low response to histamine. In vagotomy we have, in a sense, the right operation found for the wrong reasons. We must, therefore, not let low

acid findings deter us from using vagal section in the treatment of chronic peptic disease.—I am, etc.,

HAROLD BURGE.

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REFERENCE

- ¹ Butsch, W. L., *Proceedings of the Staff Meetings of the Mayo Clinic*, 1935, 10, 435.

Coagulation Failure in Pregnancy

SIR,—I have suggested (14 March, p. 691) that amniotic fluid can be implicated as a cause of clinical coagulation fluid in pregnancy. It seems that amniotic failure does not merely contain a potent coagulant but is in addition a highly active and variable substance.¹

Uterine hypotonia appears to be a constant feature in cases of amniotic fluid embolism. Furthermore, Attwood and Landing² have found amniotic fluid in the veins of uteri removed for persistent postpartum haemorrhage, and occasionally it has been the only abnormal finding.³ If amniotic fluid does cause uterine hypotonia its effect could be central or local. If its effect is local one

single experiment, but the above does seem to corroborate the circumstantial evidence available.³ While present in an in-vitro system amniotic fluid increased the duration of contractions and diminished their frequency, but when removed from the same system it left the muscle in an atonic state. This could possibly indicate a dual effect, the dominant and more permanent one being that of inhibition. Could this be the basis of postpartum uterine hypotonia and also postpartum haemorrhage in those cases where no other case can be found?

It is interesting to note that numbered among the causes of postpartum uterine hypotonia are multiparity, multiple preg-

TRACING A.—Spontaneous uterine muscle contractions in vitro. TRACING B.—Effect of introduction of 5 ml. of amniotic fluid into the system. TRACING C.—Obtained when amniotic fluid was washed out of the system. TRACING D.—When synthetic oxytocin was introduced into the system.

could expect it to inhibit uterine muscle in vitro.

During an in-vitro study of uterine function amniotic fluid was added to a standard uterine muscle preparation.⁴ Tracing A shows spontaneous uterine muscle contractions. Tracing B shows the effect of the introduction of 5 ml. of amniotic fluid into the system. It can be seen that, while the duration of the contractions increased, their frequency diminished from one in every two minutes to one in every six. Tracing C was obtained when the amniotic fluid was washed out of the system. Spontaneous contractions did not return, and the muscle remained almost totally atonic until synthetic oxytocin (Syntocinon) was added (Tracing D).

Conclusions cannot be drawn from a

nancy, hydramnios, placenta praevia, and precipitate labour.⁵ These conditions are also associated with fatal amniotic fluid embolism. The histological findings of Attwood and Landing may not be coincidental. The relevance of amniotic fluid seems to be worth further consideration.—I am, etc.,

LOUIS D. COURTNEY.

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Oxford.

REFERENCES

- ¹ Courtney, L. D., and Allington, M., to be published.
² Landing, B. H., *New England Journal of Medicine*, 1950, 243, 590.
³ Courtney, L. D., M.D. thesis. 1970. Submitted.
⁴ Lewis, V., and Pybus, A., Unpublished observations, 1970.
⁵ Donald, I., *Practical Obstetric Problems*, 3rd edn. London, Lloyd-Luke, 1964.

Jet Vaccination

SIR,—Your leading article on jet vaccination (10 October, p. 64) leads me to question the safety of this procedure. The injector is not sterilized between injections, and in many cases it produces a small amount of bleeding at the injection site. The injector could thus become contaminated with blood, thus transmitting, for instance, hepatitis virus to subsequent patients.—I am, etc.,

M. G. KREMER.

Bracknell,
Berks.

SIR,—Your leading article on jet vaccination (10 October, p. 64) rightly deprecates the use of jet injection for primary vaccination with killed vaccines. But you miss one point which equally applies to booster doses, which you say can be given satisfactorily by jet injection. If all or part of the dose is injected subcutaneously, general reactions are likely to ensue, and the main advantage of intradermal injection is lost.—I am, etc.,

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Attitudes to Psychiatry

SIR,—We were most interested to note the conclusions of a recent article "Attitudes to Psychiatry in the General Hospital" (10 October p. 106). However, like the authors, we have also wondered whether their methods led them to obtain a much rosier picture of the position of psychiatry than in fact really exists.

We base this comment not on speculation but on a preliminary examination of our own study of attitudes to psychiatry, which has just been completed. This study, which was designed and begun by one of us (G.P.M.) in 1967, has examined the change of attitudes to psychiatry within all the non-psychiatric staff of a district general hospital over a period of three years. We have, in particular, been attempting to look at the effect of a purpose-built 100-bedded psychiatric unit and day hospital on such attitudes. The unit has since 1966 served an urban and rural catchment population along the lines advocated in the 1962 Hospital Plan for England and Wales.

Our results, which we hope to report fully in the near future, indicate that, while some favourable attitude change has occurred, a great deal of uncertainty and prejudice remains. For example, there has been no significant change in the proportion of the sisters and administrative staff, who clearly agree they have "much less patience" with the mentally ill (40%), view the mentally ill as having "much less sense of responsibility" (50%), consider them "uncooperative and difficult" as patients (23%), and who advocate sterilization for severe mental illness (39%).

Two quite important differences in method may be responsible for the less favourable views we have obtained. Firstly, we attempted to preserve the anonymity of