The persistence of the duodenal cap deformity three months later, in the absence of further signs and symptoms, indicated that the ulcer had healed, leaving a considerable degree of scarring. This scarring, together with its interference with the normal growth of the duodenum, may lead to the development of pyloric stenosis in the future.

Summary and Conclusions

A case of Curling's ulcer in a child aged 4 years with 25% body surface burns is described. From the third day onwards for six weeks, severe attacks of melaena and haematemesis occurred, during which time a total of 13½ pints (7.7 litres) of blood was given. After two grafting operations, with resultant healing of the burns, the ulcer symptoms subsided and the child improved rapidly.

The prognosis in cases of Curling's ulcer is poor, especially in children, death occurring most often from haemorrhage or perforation. This case illustrates that if conservative treatment of the ulcer and its complications can be maintained until the burns have healed, then the ulcer will heal spontaneously.

My thanks are due to Mr. Randell Champion for his encouragement in publishing this case.

OBSERVATIONS ON THE TREATMENT OF RHEUMATOID ARTHRITIS BY TRANSFUSIONS OF BLOOD FROM PREGNANT WOMEN*

BY

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It has often been found that blood transfusion is effective in initiating a remission or recovery from rheumatoid arthritis. There have been many suggested explanations for the improvement. The anaemia which is so often present in rheumatoid arthritis is in most cases peculiarly resistant to treatment by oral administration of iron. Transfusion will improve this, even if only temporarily. Hartung (1943) suggested that improvement may be due to a form of non-specific protein-shock reaction or possibly to transmitted passive resistance.

Many physicians have repeatedly confirmed the potentially favourable effect of pregnancy on the course of rheumatoid arthritis. Sclater (1943), in an analysis of 388 cases of rheumatoid arthritis, noted that in no case did arthritis manifest itself during pregnancy. Hench (1938) had already stressed this point. In his observations on 22 women with rheumatoid arthritis during 37 pregnancies Hench showed that 20 of the 22 patients experienced striking and generally complete relief of symptoms during pregnancy and for a period afterwards varying from 1 to 24 months.

The frequently favourable effect which pregnancy has on the course of rheumatoid arthritis has encouraged many workers to look for an explanation of this phenomenon in the hope that therapeutic advances would be forthcoming. Barsi (1947) thought it might be possible

to imitate the effect of pregnancy on arthritis by transfusion with blood from pregnant women. He assumed that the improvement was due to a hypothetical substance circulating in the blood of pregnant women which could be transfused and utilized elsewhere. On the basis of these conjectures he transfused the blood of pregnant women into persons suffering from rheumatoid arthritis. In each case he gave 300 ml. of citrated blood, and repeated this several times according to the symptoms of improvement. He recorded the results in six cases selected from "those seemingly hopeless cases in which scientific treatment had so far yielded no results." He claimed that when improvement occurred it took place rapidly, with dramatic suddenness compared with the months or years needed to effect an improvement with gold therapy. Two cases were said to have shown lasting improvement and did not relapse—and cure was permanent in four cases. The period of follow-up was from two to six months. More recently Barsi (quoted by Hench, 1949) has reported the effect of repeated blood transfusions with blood from pregnant women in 28 cases of "seemingly hopeless" rheumatoid arthritis. Sixty-four per cent. recovered or improved, while in 6 cases a complete remission was said to have resulted and 4 were cured for three to five years of follow-up study.

I decided to investigate the results of treatment on lines similar to those advocated by Barsi and to compare these results with those obtained by transfusions of ordinary blood. I did not wish to select my cases in any way, and no restrictions were enforced from the point of view of age or sex of the patient, or severity of the disease.

Method

Fifty-three cases of rheumatoid arthritis, chosen at random, were given repeated intravenous transfusions of 300 ml. of blood from pregnant women of the corresponding blood groups. Transfusions were given so far as possible at weekly intervals. In some cases in which improvement occurred it was not considered necessary to give transfusions at so frequent intervals, and in a few cases the interval between transfusions was delayed owing to unavoidable circumstances.

Forty-five unselected cases of rheumatoid arthritis were treated by the same technique, using blood from non-pregnant donors of both sexes. All cases were observed for a minimum of six months and a maximum of eighteen months.

Pregnant women who volunteered to donate their blood were drawn from two sources. In the main, they were normal healthy women who were attending an antenatal clinic. They were at various stages of pregnancy, though it was not thought advisable to withdraw blood from those who were expecting their babies in the very near future. The donors were collected at random, the only restricting factor being that they had to be considered fit enough to withstand the withdrawal of blood without this having any harmful effect on the donor.

A few of the donors were selected from pregnant women who were hospital in-patients. Again the health of the donor had to be considered, and patients were chosen who would themselves be likely to benefit by the blood donation. (These included such cases as toxæmia of pregnancy (including pre-eclampsia), nephritis, and hypertension.)

With all donors, a blood count was done, the Wassermann and Kahn reactions were checked, and the blood groups (ABO and rhesus) were determined. A record was kept of the parity of the donor, the stage and any abnormality of the immediate pregnancy, and the blood pressure at the time the blood was taken.

*This paper is based on a thesis presented for a degree of M.D. at the University of Durham in June, 1950.

I personally withdrew the blood from each donor. In each case 300 ml. was taken from a vein in the antecubital fossa by direct introduction of a transfusion needle.

It was intended that the blood should be collected and stored in a similar way to that practised by those who collected non-pregnant blood. Accordingly, the blood was collected under sterile conditions into bottles containing 2 g. of disodium citrate, 3 g. of dextrose, and 120 ml. of sterile distilled water. The blood so collected was stored in a refrigerator which was thermostatically controlled (maintaining a temperature between 2 and 4° C.) and in which the ordinary (non-pregnant) blood was normally stored. Any bottle of blood which was suspected of bacterial contamination or haemolysis was discarded.

No blood which had been stored for more than three weeks was used, and the time between the donation and the transfusion was noted.

By observing the above routine, I felt I would be able to make a fair comparison between the results obtained by transfusion with pregnant and with non-pregnant blood.

Assessment of Cases

The assessment for improvement in rheumatoid arthritis is necessarily more difficult than it is in the more acute diseases. Bayles and Hall (1943) devised the following criteria for evaluating treatment in rheumatoid arthritis: functional activity, activity of disease, degree of deformity, sedimentation rate, haemoglobin value, and body weight.

It was thought advisable to grade the cases of rheumatoid arthritis by the system suggested by Sclater (1943), who divided his cases into four groups according to their objective features: (1) patients with periarticular swelling and stiffness, but only slight limitation of movement; (2) those with swelling and greater limitation of movement but no ankylosis—they were capable of work; (3) those with fixed joints and flexion deformities—they were unable to work; and (4) those with gross deformity—they were either bedridden or severely crippled.

Blood and urine investigations were carried out in each case before transfusion. Red and white cell counts, haemoglobin (using the Haldane estimation), grouping (ABO and rhesus), and Wassermann and Kahn reactions, erythrocyte sedimentation rate (using the Westergren method), sugar content (Folin and Wu), and blood urea by Archer and Robb's urease nesslerization technique constituted the examination of the blood. The urine was examined microscopically and tested for albumin and sugar.

On each subsequent visit by the patients the above investigations were repeated, except for the Wassermann and Kahn reactions and the blood groups.

It was felt that whilst the "group" classification of Sclater was most useful and the laboratory investigations gave valuable information, due regard should be given to subjective improvement experienced by the patient.

Thus, in finally assessing the results of treatment, I considered the cases from three points of view—namely, the subjective aspect, the objective aspect, and the results of laboratory investigation.

Details of Results

	Transfusions of Blood from	
	Pregnant Donors	Non-pregnant Donors
No. of cases treated	53	45
Cases in Group 1	7	19
" " " 2	21	16
" " " 3	15	8
" " " 4	10	2
Proportion showing some subjective and objective improvement ..	56%	44%
Proportion showing a marked subjective and objective improvement ..	19%	13%
Proportion showing some subjective and objective improvement 1½ years after last transfusion	43%	38%

Summary and Conclusions

Intravenous transfusions of 300 ml. of blood from pregnant women of corresponding blood groups were given to 53 cases of rheumatoid arthritis at weekly intervals; the results are analysed. It is considered that transfusions of blood from pregnant women produce amelioration of symptoms and signs of rheumatoid arthritis to an extent similar to that produced by transfusions of blood from non-pregnant donors, and will not produce remission to a degree comparable to that produced by pregnancy.

A few cases seemed to illustrate the degree of dramatic improvement which had been claimed to occur with transfusions of blood from pregnant women. Yet this degree of improvement was found quite rarely in the present series of cases. Moreover, in some cases an equally dramatic improvement was observed with transfusions of blood from non-pregnant donors.

Visible signs of improvement should be the main criteria in assessing amelioration of the condition. It is felt that many who claimed to have improved, experienced only a psychological benefit. A marked anaemia present initially was usually followed by subjective improvement after transfusion, but this was not always accompanied by improvement in the arthritis.

The results of transfusion are variable, and in the main unpredictable. A mild case may not improve at all, while a more severe case may improve considerably. In one case marked improvement occurred after transfusions of blood from pregnant donors, followed by a severe relapse which did not respond to another transfusion.

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Mr. R. J. McNEILL LOVE, chairman of the Medical Sickness, Annuity, and Life Assurance Society, addressing the annual meeting on June 22, said that the Society could look back on 1953 with much satisfaction. New business continued to expand, investments showed a steady appreciation, and the rate of interest had increased. New life assurance amounted to £1,618,347, which was over 40% more than in 1952. The Society was once more encouraging house-purchase business, and was normally prepared to advance up to 90% of the value of a house, with interest at 5%. In the Sickness Fund, for the second successive year, new business had produced a record in the Society's history and amounted to more than 12,000 guineas a week. The aim of this department was to protect doctors and dentists from the financial effect of an illness or accident, and each year over 1,000 members received benefit under their policies. The Medical Sickness Finance Corporation, a subsidiary company, was now able to use its own income to finance most of its advances. It provided finance for the hire-purchase of cars, medical and dental equipment, etc.