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Discussion

CHAIRMAN—Dr. D. CHESHIRE. With your permission, I will presume to begin this morning's session in a manner which differs from our programme. The reason for this springs directly from the very thought-provoking paper which Miss Göller of Heidelberg delivered to us last night. This paper, as those who were present will remember, was related to pregnancy and delivery in paraplegic and tetraplegic women, and the point that particularly struck home in a number of places was that two women were delivered of grossly brain-damaged children. One of these children was thought to be the result of spinal cord injury occurring in the first trimester, with regard to the other, it was thought that the damage to the infant had occurred during a prolonged threatened abortion and was dissociated from spinal cord injury. As is so common in good scientific meetings, the discussion went on long after the formal session closed, and a group of us felt that this was a subject which lent itself to the type of approach which in our Society was started by Michaelis, whereby one centre or individual should set out to circularise colleagues and collect information on a world-wide basis. We all know on the basis of some small experience of our own, some larger experience of Sir Ludwig's, that the paraplegic woman can conceive, carry and bear a normal child. But our experience individually is small. The proposal that this small group of us who were talking last night would like to make is that, because this originates from Heidelberg and Miss Göller is particularly working on this, we would suggest to the Society that Heidelberg should circulate, not necessarily to all members—I think this would be unnecessary—but all Centres, and invite all Centres to send to Heidelberg details (1) of women who sustained spinal cord injuries in the first trimester, and include details of abortions, both spontaneous and induced, and the children delivered at or near term, giving details as to the normality or abnormality of these children, (2) of women sustaining spinal cord injuries in the second and third trimesters of pregnancy—again giving details of still-births and normality and abnormality of children, and (3) of women becoming pregnant and having children after spinal cord injury. We are not disputing the validity of the previous work that has been done, but it was our feeling last night that it is only by collating together a large number of normals, that none of us has had enough experience of our own, that we can see the significance, the percentage, the incidence of the abnormal. But, ultimately, I think that what this is aimed at is an attempt to collect together a volume of information which will permit us to say to our obstetrical colleagues that spinal cord injury in the first trimester is or is not a significant risk of damage to the foetus which should or should not be an indication for termination of pregnancy, and this is something that at the moment, those of us talking last night felt was a gap in our knowledge.

Sir LUDWIG GUTTMANN. I think this is an excellent idea. We know now quite a lot about normal births given by paraplegics during and after their paraplegia. We

don't know enough about abnormal babies when the paraplegia or tetraplegia happened to occur in the first three months. I think when you answer that questionnaire you should also get in touch with gynaecologists and other colleagues to find out how far after other severe injuries, such as head injuries, fractures and so on occurring, abortion occurs within three months or children with deformities are born. I think we need this for a sound and proper comparison. It would be a most valuable contribution which we could make, and I support most warmly the Chairman's suggestion that there should be a world-wide investigation by all spinal units.

D. J. E. CHESHIRE (*Australia*). If I may take you even further, Mr. President. One thought occurred to me is that I know that there are spinal injuries centres which are not represented in our membership, and I put forward to Dr. Paeslack the suggestion that even the centres which are not represented in our membership might be circulated, because, apart from anything else, this might be a way to bring them into membership.

W. S. KERR (*G.B.*). I would like to say one word, and this is a complication that we must think about. Is it the injury or was it the drugs that were given to the patient at the time of injury, and this may be very difficult to track down, because the patient may have been admitted to a general accident hospital. If, as in the case that I had, the pregnancy was unsuspected for at least four weeks after the injury, it may be very difficult to track down exactly at a very much later date what drugs were given at the time of injury. So, although we may collect figures and have numbers of deformed children, we still won't know that it was the injury that caused the deformed child—it may well have been the drugs.

Sir LUDWIG GUTTMANN. Having been appointed by the Court in Germany as one of the experts in the Thalidomide Trial, I think Dr. Kerr's suggestion is very important indeed. We have to consider, in all these cases, the drugs, because certain drugs might have some adverse effects on the development of the child *in utero*. You might have read from the newspaper reports that even with regard to the embryopathy, the views of the experts were divided, let alone the discrepancies of opinion regarding polyneuropathy. The first cases which have been demonstrated in court as classical examples of thalidomide-polyneuropathy had to be withdrawn even by the prosecution, because they were really walking chemist shops. Therefore, this is even more important when we investigate embryopathy in paraplegics.

L. S. MICHAELIS (*G.B.*). If you make this enquiry, you also enquire about the number and sites of X-ray exposure in these patients. Some of them may have had a large number of spinal, possibly even abdominal X-rays, and that too will have to be taken into account.

CHAIRMAN. Well, ladies and gentlemen, if there is no further discussion, may I take it, Dr. Paeslack, that this morning you are of the same feeling as you were last night and this is a project which you would like to continue?

V. PAESLACK (*Germany*). I think the proposal of the Chairman is very important and we are in full agreement. You have seen, from the paper read by Miss Göller, that we are very much interested in these questions and that we also tried to find out already whether the accident itself or whether X-ray or medications are perhaps a cause for such development of damaged children. I think there will be more questions we will have to put, questions whether there were any operations done after the accident in these women, whether long-lasting anaesthetics were done, and all such questions. It will be some burden for the centres to whom we are sending our questionnaires, because it is necessary that all these questionnaires are exactly answered. I only can follow our Chairman and

ask you all to help us and we will try then to sample these things and perhaps next year the sexual problem will be again subject of our meeting at Stoke Mandeville.

CHAIRMAN. Thank you, Dr. Paeslack, and I am sure that this will be a fruitful project for the Society to undertake. As Professor Jochheim said last night, one of the things that he finds so attractive about this Society is that we are all putting our subject higher than our individualities and we are not worried about whose name goes on a paper—we are interested in exploration of a subject, and these words struck home to me as being a very fair expression of the feelings of the majority.

TRACHEAL STENOSIS FOLLOWING TRACHEOSTOMY

By H. L. FRANKEL, M.B., M.R.C.P.

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TRACHEAL stenosis following tracheostomy and intermittent positive pressure respiration (I.P.P.R.) has been described by Gibson (1967) and in tetraplegic patients following tracheostomy and intermittent positive pressure respiration by Frankel (1968). We have now seen this serious complication in a total of four patients. As tracheostomy is quite frequently performed in traumatic paraplegia and tetraplegia, I thought it would be worth while to describe these cases in more detail.

CLINICAL DETAILS

The main findings in these patients are shown in Table I. Three of the patients had cervical cord lesions and one had a cauda equina lesion, I.P.P.R. being needed

TABLE I

Patient	Age	Sex	Neurological lesion and reason for tracheostomy	Duration of I.P.P.R.	Time between tracheostomy and diagnosis of stenosis	Main clinical feature
1	18	M	Fracture dislocation C5. Required I.P.P.R.	4 months	4 months	Expiratory wheezing cyanosis
2	14	F	Encephalomyelitis Required I.P.P.R.	10 days	4 months	Asthma cyanosis
3	41	M	Fracture L1. 'Stove-in' chest	15 days	5 weeks (5 days after extubation)	Stridor cyanosis
4	22	M	Fracture dislocation C6. Required I.P.P.R.	2 days	3 months (1 week after extubation)	Stridor cyanosis