An important innovation had been made to make the ambulance worker an integral part of the team and when he realized this he emerged as a surprisingly enthusiastic and capable member of the emergency department staff. Regular lectures and demonstrations were given to ambulance crews and particular emphasis was placed on the importance of maintaining the airway. In one series of 182 patients who died as a result of road accidents, no less than 36% of those dead on arrival had aspirated blood, mucus, or gastric contents into the respiratory passages. As a result the ambulance worker was fully prepared to answer questions on state of consciousness, position of patient, or the amount of bleeding when he arrived at the hospital.

He said that for many years local ambulances had been provided with simple suction and resuscitation equipment, but the most successful innovation had been the provision of radio communication between the ambulance crews and the hospital doctor. This experiment had started six years ago and had amply proved its worth.

THE FIGHT AGAINST FUSIFORMIS

M. J. BETTY (Newcastle) discussed the problem of treating cerebral abscess due to anaerobic organisms of the fusiformis group (bacteroides). He noted that these were difficult to culture and often occurred in association with other anaerobic and with aerobic organisms. He stated that these organisms were strict anaerobes, Gram-negative and non-sporing. Of the four species recognized, *F. fragilis* had been most commonly found and this was invariably resistant to penicillin.

He then described in detail four patients who had cerebral abscesses due to this organism. Three were associated with middle ear infection and the fourth with cyanotic congenital heart disease. The main problem had been due to delay in diagnosis and infection by an organism which was both difficult to culture and to eradicate. The fusiformis organisms most commonly isolated were resistant to penicillin and the most useful drugs were erythromycin and chloromycetin. Erythromycin in high dosage and over long periods would achieve bactericidal levels and eradicate the infection. The organisms were also sensitive to lincomycin which might prove of value.

He stressed that the important factor in treatment was high dosage, preferably intravenous, of erythromycin or chloromycetin continued over a period of several weeks. This therapy should be started immediately if an initial smear showed Gram-negative bacilli of the fusiformis type. The associated anaerobic bacilli were almost invariably penicillin sensitive.

THE USE OF DEXAMETHASONE IN THE CONTROL OF CEREBRAL OEDEMA

JOHN P. WISSINGER (Minneapolis), LYLE A. FRENCH (Minneapolis), and F. JOHN GILLINGHAM (Edinburgh) presented their experience with the use of steroids for the control of cerebral oedema using material from the

University of Minnesota and the Department of Surgical Neurology in Edinburgh. Signs and symptoms of increased intracranial pressure showed striking remission after the administration of the potent glucocorticoid, dexamethasone (Decadron).

Initial dosage of dexamethasone recommended by the authors was 10 mg. intravenously followed by 4 mg. intramuscularly every six hours. This high dosage was maintained until a maximum response was achieved which was usually in a period of three to four days, then the dosage was decreased gradually over a period of five to seven days.

In 249 patients with brain tumour, 212 showed signs of greatly increased intracranial pressure, 31 were comatose. Two hundred and two of the 249 cases showed improvement after treatment with dexamethasone. Evidence of improvement was the prompt and continued relief for the duration of treatment of signs and symptoms of increased intracranial pressure and/or alleviation of neurological deficits. The onset of response was almost invariably within 12 to 18 hours after beginning therapy and maximum neurological improvement was usually obtained within four days. Fifty-eight patients with operative and postoperative oedema were treated. Seven patients were comatose. In 12 to 24 hours after starting dexamethasone, 43 patients showed striking improvement. Three moribund patients failed to respond.

Sixty-three patients with closed head trauma, comatose for 24 hours or more, were treated with dexamethasone. Thirty-five were awake and orientated 24 hours after therapy was started.

Forty out of 46 patients with subarachnoid haemorrhage and signs of increased intracranial pressure showed symptomatic improvement after treatment with dexamethasone. Eight patients developed signs of increased intracranial pressure after beginning x-ray therapy. After treatment with dexamethasone all showed relief of nausea, vomiting, and headache within 24 hours. In six cases of intracerebral haematoma none showed improvement with dexamethasone. Two out of three patients with pseudo-tumour cerebri showed improvement with dexamethasone therapy. Complications with the use of dexamethasone in 433 cases were rare. Gastrointestinal ulceration and bleeding occurred in four, activation of preexisting duodenal ulcer in one, psychotic disturbances in five, impaired wound healing in seven, masking of postoperative clot in three, salt and water retention in two, salt-losing syndrome in one, severe oedema after the discontinuance of therapy in three.

The authors showed electron microscopic studies of oedematous brain before and after the use of dexamethasone. There was marked diminution in swelling of the astrocytes and the ultrastructure of the white matter had returned to near normal with disappearance of the greatly expanded extracellular space.

DERMOID TUMOURS OF THE SPINAL CORD

IAN BAILEY (London) discussed spinal dermoids and their associated tumours and classified them on the basis of number of germ layers represented. He stated that the

teratoma was derived from totipotential cells and was always fused with the spinal cord. The cells of later inclusion gave rise to more superficial and simple tumours, whilst those included at the very last stage in neural tube closure gave rise to dermal sinuses. He then discussed the nature of iatrogenic epidermoid tumours following lumbar puncture.

He described a series of four teratomas, four dermoids, and four dermal sinuses. He noted that all the dermoid tumours occurred in adults of blood group A. Low back or sciatic pain was the commonest presentation and progressive paraparesis was common in the dermoids. Changes in the plain radiographs were found in five cases and included spina bifida, scalloping of the posterior aspects of vertebral bodies, widened interpedicular widths, and calcified intervertebral discs. A short history was not incompatible with a long-standing tumour. The commonest site was in the region of the conus medullaris lying dorsal to the cord.

Operative treatment was satisfactory in all cases and follow-up of one to 11 years had not shown any evidence of recurrence.

He concluded that even partial removal could produce good results, children in particular making a rapid recovery. Dermoid cysts, though simple histologically, produced the worst disability and had a worse prognosis.

ELECTRONIC DATA PROCESSING IN THE SPINA BIFIDA PROBLEM

B. H. DAWSON (Salford) discussed the problems concerning the methods and results of surgical repair of the spina bifida baby. He instanced many factors that could influence the prognosis, such as the site, size, and situation of the lesion and the amount of epithelial covering. The time after birth of referral and presence of infection were also important.

He said that assessments of functional and intellectual capacities in these patients in the long term was difficult. Some succumbed in the first few months of life; some survived with gross neurological defects. In others there were serious problems of orthopaedic and urological nature.

Experience with marginal punch card analysis of the data showed that this technique had a very limited value in handling such a multitude of prognostic factors. Efforts using the 80-column 10-row punch card variety of computer tabulation were described.

The stages of computer analysis were described and the scope and limitations of computer handling of biomedical data were discussed in general terms. Discussion of the detailed results of this data analysis was reserved for subsequent meetings.