SHORT REPORTS

Orchidectomy alone for stage I testicular teratoma

It has been common practice in the United Kingdom to recommend abdominal lymph node irradiation after orchidectomy for malignant teratoma of the testis, even in the absence of demonstrable abdominal disease. We present the details of 21 men whose only treatment at the time of presentation was orchidectomy. Their subsequent survival and pattern of relapse were compared to a similar group of irradiated patients to determine the benefits of prophylactic irradiation.

Patients, methods, and results

All patients were referred after radical orchidectomy. Clinical examination and chest radiography were the only staging procedures consistently adopted and no evidence of metastases was found. Twenty-one men seen between 1946 and 1973 received no further treatment at the time of referral. Histological specimens were reviewed at this hospital. Eighteen were malignant teratoma intermediate, two were malignant teratoma undifferentiated, and one was malignant teratoma trophoblastic. Between 1961 and 1970 100 men received postoperative lymph node irradiation. Thirty-three had malignant teratoma intermediate, 39 malignant teratoma undifferentiated, two malignant teratoma trophoblastic, two mixed teratoma and trophoblastic, and 24 mixed teratoma and seminoma.

In more than two-thirds of the untreated patients radiotherapy was deferred because of recurring doubts about its efficacy. One patient was receiving peritoneal dialysis for unrelated chronic renal failure and another was severely mentally retarded. Two refused further treatment, and one was not referred until six months after orchidectomy. Fourteen patients remained alive and well. All deaths (7 of 21) occurred within two years of presentation and were due to metastatic disease. One patient died with uncontrolled para-aortic disease, six with widespread metastatic disease, and five with definite lung metastases.

Analysis of deceased patients from the untreated group

Case No	Age (years)	Histology	Site of metastases	Time to death (years)
15	28	Malignant teratoma intermediate	Lungs	2
16	20	" " "	Lungs and liver	1
17	19	" " "	Lungs and abdomen	1
18	34	" " "	Lungs and abdomen	1·5
19	23	" " "	Widespread	1
20	61	" " "	Bilateral groin nodes	1·5
21	27	" " "	Abdomen	1·5

The irradiated patients received megavoltage radiotherapy on a 4MeV linear accelerator to the para-aortic and ipsilateral iliac nodes, the scrotum, and remaining testis. A mid-plane dose of 3500 cGy in 20 daily fractions was given. Sixty-seven patients remained alive and well at five years. The five-year survival for malignant teratoma intermediate was 22 of 33, and for malignant teratoma undifferentiated 28 of 39. Most of those who died had pulmonary metastases and only four had appreciable para-aortic disease during their terminal illness.

Comment

The long-term survival of the untreated and irradiated patients was the same, 67%. Although the untreated group was composed largely of malignant teratoma intermediate, this histology has not been associated with a better prognosis in those irradiated at this institute, where the five-year survival is 67% for malignant teratoma intermediate and 72% for malignant teratoma undifferentiated. Of those who died in the untreated group, half had appreciable para-aortic disease compared with only 12% of the irradiated patients who died. Nevertheless, the same proportion of patients from each group died of widespread disease and most had blood-borne metastases, particularly affecting the lungs.

Prophylactic abdominal irradiation had no apparent influence on the ultimate fate of our patients. Two-thirds must have been cured by orchidectomy alone, a figure supported by evidence from American series of retroperitoneal block dissections.[1] It has been suggested that adjuvant chemotherapy merits exploration in those whose disease is apparently confined to the testis (stage I).[2] This would subject more than two-thirds of our stage I patients to unnecessary, intensive chemotherapy with its attendant morbidity and unknown long-term risks. A policy of careful staging[3 4] and close follow-up with recourse to effective chemotherapy[5] at the first sign of relapse has much to commend it. Chemotherapy now offers a real possibility of cure for these patients who relapse and unnecessary irradiation and exposure to cytotoxic drugs could be avoided in most cases.

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[2] Slater AJ, James KW, Fifield R, Green GV. The investigation and treatment of germ cell tumours of the testis. *Clin Radiol* 1981;**32**: 25-30.

[3] Scardino PT, Cox HD, Waldman TA, McIntyre KR, Mittemeyer B, Javadpour N. The value of serum tumour markers in the staging and prognosis of germ cell tumours of the testis. *J Urol* 1977;**118**:994-9.

[4] Husband JE, Peckham MJ, MacDonald JS, Hendry WF. The role of computed tomography in the management of testicular teratoma. *Clin Radiol* 1979;**30**:243-52.

[5] Einhorn LH, Donohue JP. Improved chemotherapy in disseminated testicular cancer. *J Urol* 1977;**117**:65-9.

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Clonazepam: effective treatment for restless legs syndrome in uraemia

Uraemia is the most common cause of the restless legs syndrome and in our experience occurs in 15-20% of patients receiving dialysis. For many patients it is their most unpleasant and distressing symptom, preventing sleep and rarely responding to treatment. In the idiopathic syndrome, Matthews[1] found that clonazepam relieved the symptoms. We have therefore evaluated the drug in the uraemic restless legs syndrome.

Patients, methods, and results

We studied 15 patients aged 18-66 years (11 men, four women), of whom 10 were receiving maintenance haemodialysis for terminal renal failure and five were being treated for chronic renal failure. Durations of dialysis ranged from less than one to seven years. Severe restless legs had been present continuously in 13 patients for six months to five years and was intermittent in the other two. All were taking iron and folate supplements regularly and none had overt symptoms or signs of peripheral neuropathy. In all cases the symptoms were worse in the evening and at night. Most had been treated ineffectively with various sedatives and hypnotics, including temazepam, chlordiazepoxide, diazepam, nitrazepam, and lorazepam.

Clonazepam was usually given as a split evening dose of 0·5 mg at 6 pm and a further 0·5 mg half an hour before retiring, or as a more conventional twice-daily dosage for those with diurnal symptoms. The dosage was increased as necessary. Four patients were initially treated for one month with a similar regimen using diazepam 5 mg before the clonazepam was started, and in two patients the diazepam was substituted for the clonazepam after a month's successful treatment. Dialysis regimens remained unaltered throughout.

In all but one patient response was swift and complete. There was total abolition of the symptoms after the first dose of clonazepam in six of the patients; eight others responded to an increase in the dosage. Only one patient required a daily dose of clonazepam of more than 2 mg, and his response was incomplete. Diazepam given either before or after clonazepam failed to suppress the symptoms. The two patients whose symptoms had been suppressed with clonazepam which was then switched to diazepam found a return of their symptoms so distressing that they changed back to clonazepam after two and four days respectively. Other than somnolence, which was pronounced in only one patient, no adverse side effects were encountered. This patient's symptoms were only partially suppressed by clonazepam, 3 mg daily, higher doses rendering him too lethargic to drive his car the next morning.

Comment

Callaghan[2] first reported the restless legs syndrome in uraemia and noted its exacerbation with dialysis. Ekbom had earlier noted the association with iron deficiency,[3] and it has also been reported in folate deficiency of pregnancy.[4] Treatment other than oral iron or folate where indicated was, until Matthews's report,[1] unrewarding. The patients reported here were not deficient in iron, folate, or other vitamins. The aetiology of this curious syndrome is not known, though interestingly uraemic myoclonus, thought to be due to disturbed function of the brain-stem reticular formation, also responds to clonazepam.[5] The promptness with which clonazepam alone of the benzodiazepines tried suppressed the symptoms was remarkable. We believe that the preliminary results are encouraging enough to warrant a long-term controlled trial.

[1] Matthews WB. Treatment of the restless legs syndrome with clonazepam. *Br Med J* 1979;i:751.
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[4] Botez M, Lambert B. Folate deficiency and restless legs in pregnancy. *N Engl J Med* 1977;**297**:670.
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Outbreak of rotavirus gastroenteritis among premature infants

Though rotavirus causes severe gastroenteritis predominantly in infants and young children, it may infect any age group. In neonates rotavirus infection is usually subclinical,[1 2] and even in premature babies the infection is reportedly[3] mostly mild. We report an outbreak of rotavirus infection among premature and low-birthweight babies in a special-care ward. In most cases virus excretion was associated with gastroenteritis. Dehydration, weight loss, and growth retardation occurred in several cases.

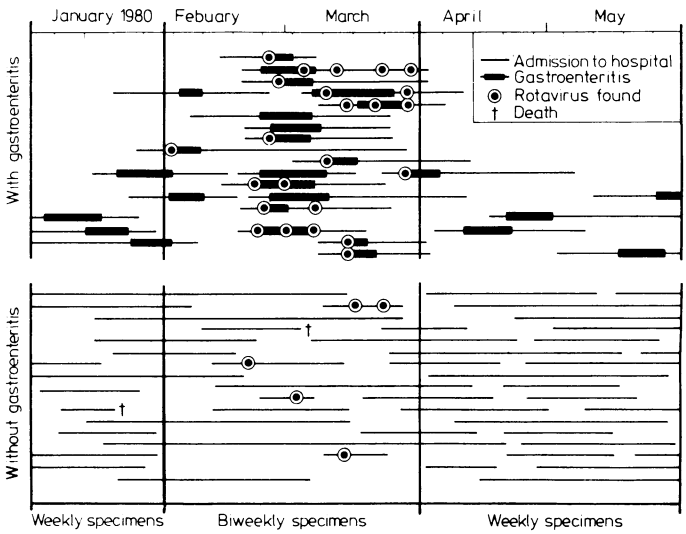
Patients, methods, and results

From January to May 1980, 513 faecal specimens were collected from 77 premature and low-birthweight babies admitted to a special-care ward of the Bambino Gesù paediatric hospital in Rome. Babies were placed in isolation and kept in incubators during the first three to 10 days of admission. Visitors were not admitted to the ward, and special attention was paid to gowning and handwashing by nursery staff. The duration of admission varied from 12 days to three months (mean 37 days). Faecal specimens for rotavirus were sought on admission and at intervals thereafter. Initially babies were sampled weekly, but when rotavirus was found in the nursery in February the frequency of sampling was increased to twice weekly throughout March, with a return to weekly sampling in April and May.

Faeces were suspended in Hanks's balanced salt solution without antibiotics to give a 20% w/v suspension. This was homogenised for 10 minutes and then centrifuged at 4500 *g* for one hour. The aqueous layer was then centrifuged at 180 000 *g* for 90 minutes. The resulting pellet was resuspended in 0·05 ml distilled water. A small amount of the suspension was placed on a carbon-coated electron microscope grid. The dried specimen was negatively stained with 1% phosphotungstic acid, pH 7·4, and examined at a magnification of 40 000 with a Siemens 102 electron microscope.

In February and March rotavirus was found in 18 newborn babies (figure). It was apparent within 10 days of admission in all affected infants, seven of whom were virus-positive within four days of admission. In seven cases several stool samples gave positive results; in four cases virus excretion persisted for 14-24 days after first being detected. Few viruses other than rotavirus were found: adenovirus and parvovirus-like particles were detected in four and two samples respectively.

From January to May diarrhoea lasting three to 16 days occurred in 28 babies. Most cases occurred in February and March, when all the rotavirus-positive stool samples were detected. At that time 14 out of 22 babies with diarrhoea (64%) and four out of 23 asymptomatic babies (17%) were rotavirus positive ($p < 0.002$). In a few cases rotavirus excretion lasted for several days after diarrhoea stopped (figure). Diarrhoea persisted for three to five days in six cases and six to 16 days in eight. Vomiting occurred



Premature and low-birthweight infants examined for rotavirus excretion by clinical state and duration of admission to hospital.

in most cases and lasted one to three days. Loss of weight was observed in 10 cases. Growth retardation occurred in 12 babies, five failing to show an increase in body weight for five to nine days and seven for 10 to 18 days after rotavirus gastroenteritis. Management was based on rehydration with oral glucose-electrolyte mixture except in two babies, both of whom required intravenous administration of fluids. Milk intolerance after enteritis did not occur.

Comment

Despite the special attention paid to preventing an outbreak of infection, spread of rotavirus occurred in the ward. The prolonged persistence of the virus suggests a mechanism of transmission from baby to baby within the ward rather than repeated introduction of the virus from outside. The clinical manifestation of rotavirus infection varied from mild to severe gastroenteritis in 14 out of 18 infected babies, and in four cases virus excretion persisted for two to four weeks.

We have no data on the serotype(s) concerned in this outbreak and cannot hypothesise on how prematurity and low birth weight influenced the severity of clinical manifestations in babies who had received less passive immunity than full-term neonates. Our findings, however, suggest that rotavirus infection may constitute a considerable problem in premature babies.

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