anthesian (neoeantergan malleate). The dosage required was between 0-3 and 0-8 g. a day, given in divided doses. Most of these cases were well controlled and had only mild side-effects. Once the required dosage was established no recurrence to the drug was not observed in the first three months of treatment. Removal of the drug or reduction of the dosage was followed within ten hours to four days by a recurrence of chronic urticaria.

Six cases of acute urticaria were treated, 5 of them the result of sensitisation to penicillin, and in 2 of these the urticaria was controlled even though penicillin treatment was continued. If this effect is confirmed it will allow penicillin therapy to be continued even in patients who manifest severe urticular reactions.

The commonest side-effects noted were sleepiness, mild headache, nausea, and dizziness. In the main they were not severe. Two patients had a single asthmatic attack during treatment. One severe toxic reaction to parenteral therapy was observed, and it is suggested that in the present state of our knowledge the drug should be administered by mouth only. It is proposed that the initial dosage should be 0-1 g. three times a day and that this should be increased as required to a maximum of 1 g. a day.

Grateful acknowledgment is made to Prof. D. M. Dunlop for his advice and criticism, and also permission to publish his case-records. We are indebted to Messrs. May and Baker Ltd. for supplies of tablets of anthesian.

REFERENCES

SHARPNEL SHOT THROUGH THE PLACENTA
BERNARD ZONDEK
M.D. Berlin
From the Gynaecological-Obstetrical Department of the Rothschild Hadassah University Hospital, Jerusalem

DURING the Palestine disturbances in August, 1939, a woman, aged 24, a primipara nearing term, sustained an injury from the explosion of a nearby bomb. She was not distinctly heard, and it was very doubtful whether the foetus was living.

The commonest side-effects noted were sleepiness, mild headache, nausea, and dizziness. In the main they were not severe. Two patients had a single asthmatic attack during treatment. One severe toxic reaction to parenteral therapy was observed, and it is suggested that in the present state of our knowledge the drug should be administered by mouth only. It is proposed that the initial dosage should be 0-1 g. three times a day and that this should be increased as required to a maximum of 1 g. a day.

The placenta was readily separable; it had been shot into the amniotic cavity. Its muscles had been much torn, with strips of muscle hanging loosely in the uterine cavity.

A male child was then extracted; the child was born in pallid asphyxia, which was relieved after treatment lasting 45 min. In other respects he had escaped unhurt.

The placenta was readily separable; it had been shot through near the edge. One of its blood-vessels had been perforated, from which extensive bleeding had taken place into the amniotic cavity.

After complete excision of all the torn tissues, the uterus was sutured in three layers, as in cesarean section. The bladder had sustained a small injury and it was possible to cover the natures with bladder peritoneum. No injury to intestines having been found, the peritoneum was closed. The torn soft tissues of the abdominal wall were excised, the skin perforations were sutured, and a drain was inserted.

The postoperative course was undisturbed except for an infection of the abdominal wall. The peritoneum gave no cause for concern. Four weeks later the patient was discharged.

Careful radiography had not revealed the shrapnel which must have entered the uterine cavity; it had doubtless been expelled thence through the vagina during the operation.

Had the patient not been pregnant, the shrapnel would undoubtedly have torn the intestines; but these were shielded by the uterus and the amniotic fluid. The foetus therefore saved its mother.

We have kept the child under observation up to now; he has developed well physically and mentally.

Five years later, early in 1944, the patient consulted me for a missed menstruation. The Ascheim-Zondek hormonal pregnancy test was positive. The patient was aware that her pregnancy, in view of the severe uterine tear which she had sustained, entailed some danger, but she accepted the risk, as she very much desired a second child. She came to me for examination once a month. The pregnancy ran a normal course. At term the question arose whether a cesarean section should be performed to avoid uterine rupture from the labour pains. In view of my experience in conservative myomectomy and of the favourable outcome of conservative management of delivery in cases so operated on, I decided not to perform a cesarean section. Labour ran a normal course and lasted only four hours. A healthy boy was born. The placenta was expelled spontaneously without difficulty.

PALUDRINE IN RELAPSING BENIGN TERTIAN MALARIA
FURTHER TRIALS
R. D. C. JOHNSTONE
M.D. Lond., M.R.C.P.
LATE MAJOR R.A.M.C.

Following the trials with 'Paludrine' already reported (Johnstone 1946a), a further series of cases of relapsing benign tertian malaria were treated at Colchester Military Hospital with paludrine and quinine combined. This treatment was thought to have distinct possibilities in view of the similarity in action of paludrine and pamaquin. As before, a control series of cases treated with the standard quinine-pamaquin course were included in the investigations. Unfortunately the number of admissions to the malaria ward fell so considerably as the investigation progressed that it was finally decided to abandon the trials before an adequate number of cases had been treated. The results, however, seem worth recording.

Exactly similar precautions, admission to hospital, and follow-up were used as in the previous investigations. In all, 61 cases were treated on the following courses, each course being used alternately:

(1) Quinine gr. 10 and pamaquin 0-01 g. t.d.s. for 10 days.
(2) Quinine gr. 10 and paludrine 0-25 g. t.d.s. for 10 days.

The final follow-up in these cases includes 29 cases of each series, two patients having failed to report in spite of repeated requests, and one patient having been accidentally killed before the end of the six-month period. The table shows the results obtained in the 58 cases successfully followed for six months.

<table>
<thead>
<tr>
<th>RESULTS OF TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course</td>
</tr>
<tr>
<td>Quinine and paludrine</td>
</tr>
<tr>
<td>Quinine and pamaquin</td>
</tr>
</tbody>
</table>

* The criteria of clinical relapse include the history of a rigor and a tertian periodicity of symptoms.

The factors which may have influenced the results have been briefly compared in the two series.

1. The average intervals between the date of arrival in the U.K. and the date of admission to hospital were for quinine-paludrine 4-8 months, and for quinine-pamaquin 4-1 months.

2. The probable areas of infection were as follows:

<table>
<thead>
<tr>
<th>Area</th>
<th>India-Burma</th>
<th>Far East (P.O.I.E.)</th>
<th>Other areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quinine-paludrine</td>
<td>24</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Quinine-pamaquin</td>
<td>20</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

The fact that each series contains equal numbers of patients who had been in captivity in the Far East obviates any possible bias due to the higher relapse-rate that is to be expected in that group.

3. The average intervals between treatment and further relapse were for quinine-paludrine 3-6 months, and for quinine-pamaquin 3-7 months.

4. As would be expected, no difference was noted in the rapidity with which the temperature fell to normal in the two series, since both received equally large doses of quinine.

CONCLUSIONS

This series is too small for conclusions to be drawn regarding an exact relapse-rate, but the results indicate that paludrine with quinine is not so effective as pamaquin with quinine for controlling further relapses of benign tertian malaria.

The possibility that paludrine may have a synergistic action similar to that of pamaquin has not been confirmed.

The results obtained in the quinine-pamaquin series closely approximate to those previously reported (Johnstone 1946a and b, Malaria Committee 1945), and the quinine-paludrine results are very similar to those found with paludrine alone (Johnstone 1946a), mepacrine (Malaria Committee 1945), and 4430 (Johnstone 1946b).

I wish to thank Major-General Sir Alexander Biggam for permission to publish this paper; and many members of the staff of the Colchester Military Hospital for their help. I am indebted to Imperial Chemical (Pharmaceuticals) Ltd. for the supplies of paludrine.

REFERENCES

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