given in the evening. Reduction in the maintenance dosage of ecolid was possible and side-effects were fewer. During the period of observation, tolerance to ecolid has not developed, and in some cases reduction of dosage has been possible. The response was good in eight cases and fair in one, the drug being stopped in the remaining three owing to severity of side-actions. These results are summarized in the Table.

Summary of Results of Treatment of 12 Patients with Severe Hypertension. Mean Blood Pressures when Recumbent are Recorded. Patients 7-12 Received Also 2 mg. Reserpine by Mouth at Night

Case No.	Sex and Age	Type of Hypertension	B.P. Before Treatment	B.P. During Treatment	Daily Dose of Ecolid	Side-effects	Result
1	F 38	Malignant	260/155	150/100	175 mg. b.d.	Unable to read. Slight dryness of mouth	Good
2	F 38	Malignant (toxaemia of pregnancy 3 years ago)	260/140	180/100	150 mg. b.d.	Blurring of vision. Moderate constipation	"
3	M 41	Malignant	240/140	150/100	150 mg.	Blurring of vision. Severe constipation	Drug withdrawn
4	M 44	Malignant (acute nephritis 24 years ago)	250/140	145/100	200 "	Unable to read. Dryness of mouth and dry cough. Slight constipation	Fair
5	F 57	Essential, malignant phase	230/140	165/105	75 "	Nausea and vomiting. Constipation. Light-headedness	Drug withdrawn
6	M 53	Malignant	210/120	160/90	100 "	Blurring of vision	Good
7	F 57	Essential	215/150	150/95	75 mg. b.d.	Blurring of vision. Slight dryness of mouth	"
8	M 61	"	220/110	140/85	50 mg.	Slight dryness of mouth	"
9	F 64	"	220/120	160/70	25 "	Severe nausea and vomiting. Constipation	Drug withdrawn
10	F 57	"	240/150	140/95	125 mg. b.d.	Slight dryness of mouth	Good
11	F 55	"	220/140	135/90	125 mg. b.d.	Nil	"
12	M 59	Essential, malignant phase	180/120	155/95	100 mg.	Blurring of vision	"

Discussion

The introduction of ganglion-blocking agents in the treatment of hypertension is due to the work of Dale (1914), who described the properties of tetraethylammonium (T.E.A.). Recognizing the improvement which could be obtained by surgical procedures in patients with severe hypertension, Lyons *et al.* (1947) employed T.E.A. to reproduce the effect of sympathectomy. The need for such a drug was demonstrated by the extensive use of T.E.A. in intravenous dosage, despite its marked toxicity. Organe *et al.* (1949) showed that the bis-quaternary amine hexamethonium was a practical method of lowering the blood pressure. However, the generalized activity of this drug proved to be a handicap, as its actions, beyond inhibition of sympathetic ganglia, constituted side-effects. The serious complication of ileus, due to vagal block, has been described. Paton (1951) suggested that it might be possible to produce ganglion-blocking agents more or less adapted to different ganglionic systems. It was with this purpose that Maxwell and Campbell (1953) investigated a large number of new drugs inhibiting synaptic transmission. Pentolinium was found active in lowering the blood pressure in smaller doses than hexamethonium, and it had only a weak action on gastric secretomotor activity. It is effective by mouth in a high proportion of cases, and it has been combined successfully in oral dosage with reserpine.

The research by Trapold *et al.* (1955) has been concerned mainly with the production of a ganglion-blocking agent consistently active by mouth. Ecolid has met this require-

ment and has also a longer duration of action than pentolinium. This increase in consistency and duration of oral action is accompanied by side-effects intermediate between those of hexamethonium and pentolinium. The treatment of our patients has been complicated by these side-effects. However, we have found that combined dosage of reserpine and ecolid by mouth affords a practical method for the treatment of hypertension, particularly in the smaller dosage required for the less severely ill patients, when side-effects are reduced.

Summary

A new hypotensive drug, ecolid, has been used in the treatment of severe hypertension. Consistent activity by mouth has been confirmed. The initial dose should not exceed 25 mg., and treatment consists of 25 to 200 mg. administered before breakfast, with a dose also during the evening, if required. It is more active than pentolinium, but side-effects are more severe; the duration of action is longer. The combination of oral dosage of ecolid and reserpine has been found useful in the treatment of hypertension.

We are grateful to Dr. J. Gibson Graham, senior consulting physician, Royal Alexandra Infirmary, Paisley, for permission to record these observations, and to Ciba Laboratories Ltd., for supplying the drugs used.

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Medical Memoranda

Delayed Onset of Signs in Extradural Haemorrhage

Variations in the clinical picture resulting from extradural haemorrhage are common, but it is unusual for the development of signs of cerebral compression to be delayed for more than 24 hours after the receipt of injury. The compression, once initiated, is usually rapidly progressive, leading to death within 48 hours if unrelieved. In the following case, consciousness was never lost, the onset of clinical signs was insidious, and operation was not performed until six days after injury.

CASE REPORT

On September 1, 1954, a boy aged 12 was riding downhill on his bicycle when the brakes failed. To stop the bicycle he put a foot between the spokes of the front wheel and was thrown over the handlebars, striking the right side of his head and his right leg on the ground. He did not lose consciousness, but vomited three times.

On admission to hospital he was found to be alert and bright, with good recollection of events before and after the accident. There were bruises in the right temporal region and over the right shin. The left eye had been removed in infancy following an injury, but the pupillary reactions on the right side were brisk and the optic fundus was normal. There was considerable haemorrhage from the right ear, and radiography showed a fine vertical fracture of the squamous part of the temporal bone on the right side. The pulse rate was 64.

Next day, apart from a little headache, the boy was well and the bleeding from the ear had stopped. Two days later

the headache had improved greatly and was only occasionally present. However, on September 6 he vomited once and said that his headache was worse. He was quite bright and spent most of the day reading. For the first time it was noticed that there was slight papilloedema on the right side.

A provisional diagnosis was made of subdural haematoma on the right side, and it was decided that an exploratory operation was necessary. This was carried out on September 7, a general anaesthetic being used in preference to local analgesia because of the patient's youth and the absence of any evidence of depressed conscious level. An anterior temporal burr-hole was made on the right side. This revealed an extradural clot, and so a temporal bone flap was raised in order to provide adequate access. A dark jelly-like clot 8 cm. in diameter and 2 cm. thick was found, extending down on to the base of the skull. When the clot had been removed there was haemorrhage from the anterior division of the middle meningeal artery, and this was stopped by diathermy. The bone flap was replaced and the scalp was sutured in two layers.

After the operation the patient made an excellent recovery and was discharged to his home on September 23.

COMMENT

It is possible that the bleeding from the ear provided decompression in the early stages. This may be the reason why no tentorial pressure cone was formed and no distortion of the perforating arteries occurred. If removal of the clot had been delayed it is probable that a blood cyst would have formed, as in the case reported by Rowbotham and Whalley (1952). Mental deterioration and more severe headache would then have resulted.

We wish to thank Dr. George Davison and Mr. G. F. Rowbotham for their help and for permission to publish this case report.

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Case of Carcinoma of Third Part of Duodenum

Carcinoma of the duodenum is a rare condition which may be recognized radiologically. Its incidence is given as 0.3% of all gastro-intestinal carcinomata and 45% of small-gut tumours. The frequency of occurrence of the tumour at different sites of the duodenum is: 20% suprapapillary; 60% peripapillary; 20% infrapapillary.

Our case is thought to be of interest because it records a duodenal carcinoma occurring at its rarest site, a correct pre-operative diagnosis of the condition, and a tumour found to be resectable at laparotomy.

Dunhill (1952) and Rogers *et al.* (1952) reviewed the condition and described cases that had been under their care, as well as cases known to them. Freeman (1954) reviewed the literature on the subject, but could find only 24 cases of primary carcinoma of the infrapapillary portion of the duodenum diagnosed pre-operatively by radiology. In only 4 out of the 24 cases mentioned was the radiological diagnosis made with confidence; however, a post-operative scrutiny of the skiagrams of many proved cases indicated that a correct radiological diagnosis might have been made more often. In only 7 out of 24 cases seen at the Mayo Clinic was the diagnosis considered pre-operatively. Most cases are revealed at either laparotomy or necropsy. The age of the patients in whom the disease occurs is reported as varying from 44 to 64 years. Successful excision of the growth is uncommon; Eger (1933) states that only two cases known to him have lived longer than five years after operation. An increasing awareness of the existence of this tumour should stimulate a more careful radiological exam-

ination of the duodenum of patients with upper abdominal symptoms for which no lesion is found to provide a satisfactory explanation.

Most of the cases reported appear to have presented with palpable lumps, severe dehydration from prolonged vomiting, or, as in Dunhill's case, with symptoms arising from unsuccessful gastro-enterostomy. In cases suitable for operation the most desirable surgical treatment is resection of the growth and anastomosis of the divided gut. Either side-to-side or end-to-end anastomosis may be employed; and, judging by the results of operations performed in this manner, observers think that the dangers of denuding the posterior surface of the duodenum may have been exaggerated.

CASE REPORT

A man aged 49 had had episodes of vomiting over a period of three months, but no previous indigestion. He frequently vomited bile-stained material. He had anorexia and had lost weight. Clinical features were indistinguishable from those of pyloric obstruction.

A barium meal showed stricture, with malignant features, of the third portion of the duodenum (see Fig.). No lesion of the oesophagus and stomach was revealed. Pathological report: R.B.C., 5,000,000; Hb, 76%; normal blood chemistry.

Radiograph showing stricture of the third portion of the duodenum.

At laparotomy the radiological diagnosis was confirmed. A tumour of the third portion of the duodenum, not fixed to the pancreas, was found, with moderate dilatation of the duodenum proximal to the tumour. There were no obvious secondary deposits in either the lymph nodes or the liver. The tumour, with a segment of gut extending from the second portion of the duodenum to include 6 cm. of the jejunum, was excised from beneath the mesenteric vessels. The jejunum was brought through the mesocolon to avoid the dissected area, and the ends of the divided gut were anastomosed. Catgut and linen thread were used for the through-and-through and sero-muscular sutures respectively. Histological report: adenocarcinoma.

Recovery was uninterrupted, and the patient was known to be alive and well six months after operation.

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