disappeared. Two cases of retrobulbar neuritis had those abnormal movements, and in these the pupils were markedly dilated. In the following cases the motor side of the pupillary arc was presumably affected. A middle-aged man sustained a basal fracture of the skull in falling off a bus. He had good vision in both eyes, but had a complete third-nerve palsy on one side, and was Wassermann-negative. There was an undulate movement of the pupil border. A similar case observed over some months gradually recovered and the segmental movement merged into the normal total response. An elderly woman, having good vision in both eyes and Wassermann-negative, developed an internal ophthalmoplegia of vascular origin, and in a pupil which was immobile directly and consensually to light segmental movement was seen. A young married woman—Wassermann-positive, myopic-astigmatic, with good corrected distance vision—complained that she could not read. Both pupils were dilated and responded poorly to light, and there was bilateral paresis of accommodation. Both segmental and undulate contraction of the pupil were seen, and occasionally there was a feeble total movement of the pupils. This woman has been observed over 18 months and the signs are unchanged; there has been no recovery with establishment of the normal contraction. Her antisyphilitic treatment has been erratic. Two cases of unilateral Adie's pupil showed the abnormal movement. Squinting amblyopes never showed the abnormality.

To watch the behaviour of the pupil in this respect under the influence of factors acting peripherally, routine mydriasis with homatropine 1% was studied. After about 10 minutes the lessening total contraction gave place to segmental contraction before immobility. On the other hand, no abnormal movement was seen after mydriasis from subconjunctival injection of cocaine 2% with adrenaline.

Discussion

This pupillary unrest may occur, then, in sufficiently severe disorder of the afferent or efferent nervous paths to the sphincter of the pupil. Further, it may be induced by the peripheral action of mydriatics which inhibit the choline flux, but not by those mydriatics which stimulate the sympathetic. It is not seen in the contracted pupil. It would seem to be due, first, to diminished conduction in the nerve paths to the sphincter pupillae, for the movement is seen only in pupils of diminished response; and, secondly, there must be a pathological variation or inequality of flux within the nerve plexus. Some vestigial impulses get through and produce a local twitch, and in the immediate neighbourhood these impulses fail, or arrive after an interval to produce an undulate reaction. The chronaxie of the nerve paths to the sphincter is unequal throughout its distribution in these cases. Wolfrum (1926), when examining the minute histology of the pupil, was struck by the radial distribution of the nerve fibres entering the sphincter pupillae, and he speaks of the Sattler phenomenon. If the distribution of the third nerve to the sphincter of the pupil were a fine uniform plexus it would be difficult to understand a local emergence of movement, but as it is supplied by twigs running into the muscle fibres and at right angles to them the explanation of the origin of the movement becomes acceptable.

Finally, the sign, so far as this short investigation will allow us to conclude, would not appear to have any localizing value; it is a fibrillation of the pupil resulting from impaired integrity of the nervous arc of the sphincter pupillae occurring at any part of the arc.

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A. M. Harvey and F. T. Billings (*Amer. Heart J.*, 1945, **29**, 205) report three cases of coronary occlusion after the institution of therapeutic hyperpyrexia for sulphonamide-resistant gonococcal urethritis. All the patients were young adults with no previous cardiovascular disease. In no instance was the patient critically ill. Electrocardiograms in each case showed progressive changes similar to those observed in patients with occlusion of the anterior ascending branch of the left coronary artery.

Medical Memoranda

Fistula between the Small Intestine and One Horn of a Uterus Bicornis

The following notes of an unusual case of fistula may be found of interest.

CASE HISTORY

A single woman of low-grade mentality, 28 years of age, was first seen in March, 1944, at the obstetrical department, where she was found to be pregnant. The pregnancy was complicated by hydramnios and confirmed by radiography. On May 29 she was prematurely delivered of a stillborn exomphalic male foetus. The puerperium was characterized by an irregular temperature with rather offensive lochia, but she soon settled down and was discharged on the 14th day.

On July 6 she was readmitted complaining of an offensive vaginal discharge and severe perivulval irritation. The vulva was grossly excoriated and profuse discharge was coming from the vagina. On vaginal examination, among other debris several undigested cooked green peas were seen coming through the cervix uteri. The patient had eaten peas four hours earlier. The discharge continued while she was under observation, and consisted of undigested food giving bile-pigment reactions. It was obvious that a fistula existed between a high part of the intestinal tract and the uterus.

On July 26 the abdomen was explored and on the left side of the pelvis a curious pyriform uterus was seen. At the fundus there was an adherent matted mass of small-intestine coils. The coils were gradually separated, and one was found welded on to the fundus. On separation this coil had an opening the size of a sixpence continuous with the uterine lumen. Both openings were closed.

Further examination of the uterus revealed the fact that the pyriform uterine swelling was an enlarged horn of a uterus bicornis. Separate Fallopian tubes opened into the apex of each horn. It is probable that the fistula had resulted from an attempt to end the pregnancy.

I am indebted to my colleague Mr. Barnie-Adshead for the opportunity to operate on this case, and to Dr. J. C. Miller for help with the case notes.

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Melaena due to Peptic Ulceration of a Meckel's Diverticulum

The case recorded below seems of sufficient interest and rarity to merit description. The occurrence of peptic ulceration in a Meckel's diverticulum is rare in any country, but seems particularly rare in England. In a review of the literature up to 1934 (Johnston and Renner, 1934) 60 cases of the condition had been described, of which only seven had come from English journals.

Meckel's diverticulum, a remnant of the vitelline duct, is present in 2% of the population, and is one of the sites of heterotopic gastric mucosa formation. It is prone to the same diseases—of which peptic ulceration with haemorrhage is one—as the stomach and the first part of the duodenum. The majority of cases occur in children and young adults of the male sex, although two of the four cases reported by Chesterman (1935) occurred in the female. The presenting symptom is rectal haemorrhage. The bleeding is often recurrent and may produce a severe degree of anaemia. Pain is not always present, but when it occurs is colicky in type and umbilical in situation. In the absence of perforation there is usually no clinical abnormality detectable on abdominal or rectal examination. It is impossible to demonstrate the diverticulum on radiological examination.

CASE REPORT

A boy aged 16 was admitted on June 24, 1944, with abdominal pain and the passage of blood per rectum for the previous 13 hours. The onset was sudden, and occurred while he was at work as a railway porter. The pain was colicky, and was situated in the region of the umbilicus; the attacks of colic lasted a few minutes and recurred every few minutes. The passage of blood coincided with the onset of the colic. While in the ward he passed several ounces of dark-red blood. There was no vomiting. He gave a history of three previous vague attacks of "stomach-ache" associated with constipation during the past year. Each attack lasted about one week. He had no previous melaena.

On examination the tongue was furred. The abdomen showed slight generalized tenderness and rigidity, but no mass could be felt. Rectal examination revealed the presence of blood, without any other abnormality. A pre-operative diagnosis of intussusception was made, and operation was proceeded with immediately.

Operation.—A right mid-abdominal split-rectus incision was made under open ether anaesthesia. There was no evidence of intussusception. The whole of the large bowel and some coils of the small bowel were distended with blood. On further search a Meckel's diverticulum was found on the antimesenteric border of the small bowel, 2½ ft. from the ileo-caecal valve. The diverticulum and the