

of oesophageal carcinoma was established, although it is conceivable that the carcinoma offered additional obstruction to the passage of the instrument. Another possibility is that the carcinoma actually developed after the bougie had broken during the period when the achalasia was no longer under control. However, this sequence of events seems very unlikely, since examination of the chest contents at thoracotomy less than four months later revealed that the carcinoma had already extensively invaded the structures around the oesophagus.

It is generally accepted that hypertrophic pulmonary osteoarthropathy is rarely associated with diseases of the oesophagus. However, Brooks (1913) observed that hypertrophic osteoarthropathy was sometimes a feature in patients with mediastinal neoplasms which had invaded pulmonary tissue. Although in the above patient it is possible that clubbing had existed for a considerable period, the symptoms of hypertrophic osteoarthropathy were first noticed less than three months before his admission to hospital. For this reason it seems likely that the specific changes which developed in his distal bones and joints were associated with the spreading oesophageal carcinoma rather than with the achalasia. If this was so, the development of hypertrophic osteoarthropathy or even of simple clubbing should be regarded as highly significant in any patient with achalasia. Unfortunately, however, if the suggestion made in this case is correct, the appearance of these physical signs is likely to imply that the carcinoma has already spread to the pleura and pulmonary tissue. According to Flavell (1956) and Brea (1957), the severe joint pain of hypertrophic pulmonary osteoarthropathy may be relieved by vagotomy or hilar denervation. If this neurogenic theory is correct, it is not surprising that the pain in the limbs of this patient persisted after thoracotomy, since, although a Heller operation was performed, the hilar regions and the vagi were left intact.

**Summary and Conclusions**

A case of achalasia of the cardia of 23 years' duration is described in which carcinoma of the middle third of the oesophagus developed in association with hypertrophic pulmonary osteoarthropathy.

The occasional development of carcinoma of the oesophagus in patients with long-standing achalasia is emphasized. Although the early diagnosis of this complication is often difficult, regular observation of patients with achalasia is important. If a superimposed oesophageal carcinoma is suspected, oesophagoscopy as well as radiology, preceded by adequate lavage, should be promptly carried out. Exfoliative cytological examination may also be of value in these patients.

Probably the risk of carcinoma in patients with achalasia is negligible only in those in whom permanent dilatation of the cardia is achieved during the early stages of the disorder. It is possible that the daily passage of a bougie over many years further contributes to the development of chronic irritation of the oesophageal mucosa.

The development of hypertrophic pulmonary osteoarthropathy in patients with achalasia may be an indication that an oesophageal carcinoma has developed, with secondary spread to the pleura and pulmonary tissue.

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**NOSE-BLEEDING AND HIGH BLOOD PRESSURE**

BY

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Nose-bleeding is often said to be associated with high blood pressure. This belief is perpetuated by the standard textbooks of nasal disease and general medicine, in statements based on clinical impressions unsupported by objective quantitative data. One reads that epistaxis frequently accompanies high blood pressure (McLaggan and Collier, 1952); that hypertension is a common cause of nose-bleeding (Reading, 1953); that arterial hypertension often gives rise to epistaxis (Garland and Phillips, 1953); and that hypertension is the commonest systemic cause of epistaxis (Hunter, 1956).

This survey attempts to assess the validity of these statements by determining the frequency of nose bleeding in patients with high blood pressure, and the blood-pressure levels in patients presenting with nose bleeding.

**Material**

The hospital notes of two groups of patients were reviewed.

*Series I: Patients Known to Have High Blood Pressure.*—This group consisted of (a) 173 patients (86 males, 87 females) currently attending the hypertension clinic at Radcliffe Infirmary, and (b) 201 patients (89 males, 112 females) with diastolic pressures of more than 100 mm. Hg, culled from the patients admitted to the Radcliffe Infirmary in the 12-months period January–December, 1956. Of this subgroup, 143 (71%) were admitted because of high blood pressure, cardiac or cerebral vascular disease; 24 (12%) were admitted for surgical treatment; 20 (10%) for gynaecological

TABLE I.—Age Incidence of 374 Patients with High Blood Pressure (Mean Age, 57.4 Years)

Age (Years)	No. of Patients	Age (Years)	No. of Patients
Under 30	8 (2.1%)	60–69	99 (26.5%)
30–39	20 (5.4%)	70–79	47 (12.6%)
40–49	62 (16.5%)	80+	7 (1.9%)
50–59	131 (35.0%)		

procedures; 7 (3.5%) on account of diabetes mellitus, and 7 (3.5%) with skin conditions. The age structure of the whole series, comprising 374 patients (175 males, 199 females) is shown in Table I.

*Series II: Patients Presenting with Nose-bleeding.*—In this group were 162 patients (86 males, 76 females) admitted to the E.N.T. department of the Radcliffe

Infirmary during the five-year period 1952-6 inclusive. The age structure of this group is shown in Table II.

TABLE II.—Age Incidence of 162 Patients Presenting with Nose-bleeding (Mean Age, 53.4 Years)

Age (Years)	No. of Patients	Age (Years)	No. of Patients
Under 10	7 (4.3%)	50-59	39 (24.0%)
10-19	4 (2.5%)	60-69	42 (25.9%)
20-29	5 (3.1%)	70-79	25 (15.4%)
30-39	13 (8.1%)	80+	9 (5.6%)
40-49	18 (11.1%)		

### Methods

*Series I.*—From the documents, information was obtained about the occurrence of bleeding from the nose and from other sites, the blood pressure and the length of time for which it had been known to be high, and the level of the blood urea.

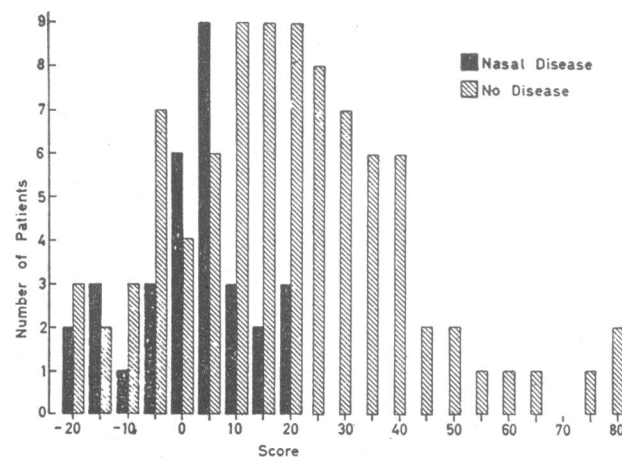
*Series II.*—From the documents the diastolic blood-pressure level just before the patient was discharged was obtained, thus excluding any errors due to the pressure being recorded during a period of acute blood loss. The pressure readings were then converted into an age- and sex-adjusted diastolic score (Hamilton *et al.*, 1954).

Note was also made of the local nasal state at the time of the bleeding—that is, whether there was a nasal abnormality such as a recent fracture, sinusitis, polyps, tumours, or deviated septum, or whether, apart from the bleeding-point, the nose appeared normal.

### Results

*Series I.*—(1) *Nose bleeding*: Of this group of 374 patients with high blood pressure 17 (4.5%) had complained of nose-bleeding. For 8 of these it had been the presenting symptom which had led to the discovery of the high pressure. There was no correlation between the occurrence of nose-bleeding and the sex and age of the patient, the level of blood urea, or the length of time for which the high blood pressure had been known to be present. Of the 17 patients with nose-bleeding, 9 appear to have bled once only, the remainder having had recurrent bleeding. (2) *Bleeding from other sites*: 17 (4.5%) patients of the 374 had had gastro-intestinal bleeding, but in only three of these could any gut lesion be found. All the patients had had barium studies, and 3 of the 14 in whom these were normal had had exploratory operations, with negative results.

*Series II.*—41 (25.4%) patients out of this group of 162 patients presenting with nose-bleeding did not have



Frequency distribution of age- and sex-adjusted diastolic scores in 121 patients presenting with nose-bleeding.

their blood pressure recorded. Table III shows the level of diastolic pressure in the remaining 121, subdivided into those with nasal disease and those without. Because the age composition of the two groups is dissimilar, their blood pressure levels cannot be directly compared. It is, however, possible to correct for this age difference by translating each patient's diastolic pressure into an age-adjusted score, as described by Hamilton *et al.* (1954). The deviation, in mm. Hg, between an observed diastolic pressure and the mean for the general population at that age is adjusted to give a predicted deviation at the age of 60. This is the age- and sex-adjusted diastolic score, and the frequency distribution

TABLE III.—Diastolic Blood-pressure Levels in mm. Hg of 162 Patients Presenting with Nose-bleeding

Nasal Disease			No Nasal Disease		
Up to 95	Over 95	Not Recorded	Up to 95	Over 95	Not Recorded
30	2	8	25	64	33
Mean age of group 49.7 years			Mean age of group 57 years		

of these scores for patients with nasal disease and for those without is shown in the Chart. The mean age-adjusted score in the group with nasal disease was +2 mm. Hg, with a standard error of  $\pm 1.9$ ; the mean score in the group with no nasal disease was +20 mm. Hg, the standard error being  $\pm 2.2$ . Standard error of the difference in means = 2.9 mm. Hg,  $p < 0.01$ .

### Discussion

*Series I.*—Assessment of the frequency of a symptom by retrospective documentary studies cannot be expected to give a complete picture. It is probable that unless the nose-bleeding occurred just before the patient's visits to hospital, or was of considerable magnitude, it would not be complained of, and would therefore not appear in the records. It is of interest that in the documents of only two patients was the negative finding "no nose-bleeding" recorded, and the occurrence of nose-bleeding in approximately 5% of this group of patients with high blood pressure almost certainly underestimates its true frequency. In this series, in half of those in whom it occurred it was the symptom which made the patient seek medical advice and which led to the discovery of the high blood pressure. Gastro-intestinal haemorrhage, on the other hand, impresses itself more forcibly on both patient and attendant, and is therefore more likely to be recorded in the notes. The fact that it occurs with the same apparent frequency as epistaxis is, however, of interest, as is the high proportion of patients (14 out of 17) in whom no causal lesion could be found, despite full investigation. "Isolated haemorrhages" from the lung, renal tract, and gut, without apparent cause, have been said to occur in patients with high blood pressure (Hunter, 1956), but such bleeding, apart from that into the gut, was not found in this series.

*Series II.*—There is a clear-cut and striking difference between the distribution of age- and sex-adjusted scores in the group of patients with nasal disease and the group in which no local lesion was present. The patients with nasal disease are grouped about zero, indicating that their diastolic pressures are similar to those of a random sample of the general population. Those without nasal disease, on the other hand, clearly represent a different population, being grouped around a mean of +20 mm. Hg.

We may say, therefore, that in the absence of local disease nose-bleeding is associated with high blood pressure.

### Summary

Seventeen patients (4.5%) from a group of 374 with high blood pressure had bled from the nose, and in 8 of these this was the presenting symptom. It is likely that these findings are an underestimate of the true frequency of epistaxis in these patients. Attention is drawn to the occurrence of gut-bleeding, in the absence of discoverable gastro-intestinal disease, in this group.

Thirty-two patients with nasal disease who were admitted to hospital because of nose-bleeding showed a normal distribution of age- and sex-adjusted diastolic scores. Eighty-nine patients without local nasal disease had an age- and sex-adjusted score distribution totally different from that of the general population.

Nose-bleeding, in the absence of local nasal disease, is therefore associated with high blood pressure.

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## THE DIAGNOSIS OF PSEUDOMYXOMA PERITONEI

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Exactly a century ago Spencer Wells began his series of ovariectomies. Among the first 114 cases which he reported (Wells, 1865) there were two examples of pseudomyxoma peritonei. It was not, however, until 1901 that the same condition was found as a complication of an appendicular mucocele in a male patient (Fraenkel, 1901). Since that time reports of a single case or of a few non-gynaecological cases of pseudomyxoma have appeared at intervals, the largest series being that of Masson and Hamrick (1930), who described six cases from the Mayo Clinic. The exact nature of the material present in the peritoneal cavity is uncertain; it has variously been described as mucus, mucin, and pseudo-mucin. The origin of the mucinous material is also disputed, some pathologists believing that it is secreted by appendiceal cells which have been transplanted to the peritoneum, while other workers think that it is the product of a peritoneal reaction to irritation.

In many of the cases in which pseudomyxoma has developed in females with pseudomucinous cysts of the

ovary, some appendicular lesion has also been present. A mucocele is found in about one out of every 1,000 appendices removed, and, as only a few mucoceles rupture, pseudomyxoma peritonei, which is not of ovarian origin, is a rare condition. A correct diagnosis is usually not made until laparotomy is performed. We recently observed two cases within a period of a few months; the experience gained with the first case enabled a correct pre-operative diagnosis to be made in the second.

### Case 1

A 59-year-old man was admitted to hospital complaining of increasing abdominal distension and breathlessness, which had begun three months previously. He looked healthy, but his abdomen was strikingly enlarged, with an everted umbilicus and distended venous channels coursing upwards. A fluid thrill was easily elicited, but shifting dullness could not be demonstrated. No masses or abdominal organs could be palpated. A tense irreducible hernia was present on the right side, and there was oedema of both ankles.

Paracentesis abdominis was performed, but fluid could not be obtained, even with the largest cannula, until suction was applied. With strong suction only a few millilitres of mucinous material were obtained. Laparotomy was then carried out. The abdomen was found to contain about 4 litres of rather tenacious material; as much of this material as possible was removed. There were a few small cystic masses attached to the omentum, but other structures could not be identified. A course of radiotherapy was subsequently given, without benefit; the patient's abdomen continued to enlarge, but his general condition remained good. Two further laparotomies were necessary in order to remove the accumulated mucinous material; some large honeycomb-like masses were also found in the abdomen. A biopsy of one of the masses showed that it consisted of mucoid material and fibrous tissue, but no viable epithelial cells were seen. The operations were carried out at intervals of nine months, but at none of them was it possible to determine the origin of the condition. Symptomatically the patient was much improved after each operation, but six months after the last laparotomy his general condition had begun to deteriorate. Because of his large abdomen he was confined to a bath-chair at home.

### Case 2

A 60-year-old man was admitted to a chest hospital on account of a productive cough and small haemoptysis. Full investigation did not reveal any pulmonary lesion, but a mass was noted in the right upper abdomen. He was therefore transferred to a general hospital. On admission there the patient looked fit and well. His abdomen, however, was grossly distended and the presence of an undefined mass in the upper abdomen was confirmed. A definite fluid thrill was present, but there was no shifting dullness. On rectal examination a firm mass could be felt projecting backwards from the recto-vesical pouch. Barium-meal radiographs revealed an indentation of the wall of the stomach; gall-stones were also present, and in the region of the lower pole of the caecum there was a calcified ring about 4 cm. in diameter (see Fig.). A diagnosis of pseudomyxoma peritonei was made and operation advised.

At laparotomy the abdomen was found to be filled with slightly greenish semi-translucent material of the consistency of a half-set jelly; several litres of this material were removed. There were numerous large plaques and masses like honeycombs adherent to and obscuring the omentum and intestines. It was impossible to locate any primary lesion, as the appendix and gall-bladder were hidden in masses of tissue. A biopsy from this tissue showed that it consisted mainly of mucinous material, with some fibrous tissue: in some places a well-differentiated intestinal type of epithelium was seen. Following this operation the patient