Though we showed a positive correlation between the resting levels of circulating F.D.P. and the plasminogen activator in normal subjects the relation was not highly significant. This indicates that the concentration of circulating F.D.P. is probably the end-result of a complex dynamic system which will include fibrin deposition and active fibrinolysis associated with fibrinolytic inhibition.

It cannot be assumed that the results of our study necessarily represent definite proof of continuous in-vivo intravascular coagulation and fibrinolysis as envisaged by Astrup, though the exercise and adrenaline studies are very suggestive. More information is required on the rate of excretion of circulating F.D.P. in physiological circumstances, for if the present concept of a half-life of approximately nine hours is substantiated (Sherry, 1965), then the resting values obtained in this study could merely represent the end-product of transient episodes of exercise or anxiety which occurred several hours before the blood was withdrawn. Furthermore, we have no proof that these F.D.P. are derived from intravascular deposits of fibrin, for it is possible that they may represent a by-product of minute damage and repair within the tissues. Further work on these problems is in progress.

Summary

From 106 apparently healthy subjects 147 serum samples were assayed for their fibrin degradation product (F.D.P.) content by the tanned red cell haemagglutination inhibition immunoassay technique. In 98% of these samples it was possible to detect a measurable quantity of F.D.P., the mean value being 4.9 ± 2.8 $\mu\text{g./ml.}$ There was no significant sex difference or a consistent change during the menstrual cycle. Further studies with the use of exercise and intravenous adrenaline were carried out in order to evaluate the significance of these findings in relation to the concept of an in-vivo dynamic equilibrium between coagulation and fibrinolysis.

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Medical Memoranda

Malignant Tumour of Brown Fat in Patient with Turner's Syndrome

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CASE REPORT

A 24-year-old typist was first seen in January 1966, when she complained of a slowly enlarging painless swelling in the right scapular region that had been present for one year. She had no other complaints, but on systematic questioning it was noted that she had primary amenorrhoea.

On examination there was a non-tender subcutaneous swelling measuring 5 by 5 cm. below the right scapula. The tumour was not attached to skin but was attached to deep structures. There were no signs of inflammation, but there were some dilated veins over the tumour. The patient had a short stature with a total height of 54 in. (137 cm.) and an arm span of 60 in. (142 cm.). She had unusual facies with a small mandible, prominent inner epicanthal folds, and large low-set ears. There was no webbing of the neck or cubitus valgus, but she had a low hair-line with

syndactyly of the fingers and toes. The chest had a shield-like configuration. Breast development was present but slight. Pubic and axillary hair were scanty. Blood pressure was 135/90 mm. Hg. Hypoplastic genitalia were noted on pelvic examination, and the ovaries could not be palpated.

Investigations.—X-ray examination showed a normal sella turcica and small facial bones; the radial and ulnar epiphyses had not united, but fusion had occurred at all the epiphyses of the elbow. 17-Ketosteroids 4.3 and 5.5 mg./24 hours. 17-Hydroxycorticosteroids 12.4 and 4.4 mg./24 hours. After four days' A.C.T.H. stimulation 17-KS was 27.8 and 17-OHCS was 26 mg./24 hours. Gonadotrophins 1.8-3.6 $\mu\text{g./24 hours}$. Buccal smears showed a chromatin-negative pattern.

Five hundred neutrophils were examined and only one type A and three type B appendages were seen (normal for female is six or more). There was a predominance of type C nuclear appendages that are seen more often in the male. Blood culture gave a good growth of cells for chromosome studies. The model number was 45. Karyotypes from several cells showed the chromosome pattern of Turner's syndrome 45/XO. However, a few cells with 46 chromosomes showed the normal number of chromosomes (16) in group C. The probable diagnosis seemed to be a mosaic with some cells containing 45/XO chromosomes and others 46/XX.

At operation a lobulated flabby vascular tumour was partially removed deep to the latissimus dorsi. Though the tumour was mainly encapsulated a radical excision was not possible, since part of it was attached to the spinous process and lamina deep to the surface of the erector spinae muscle.

The specimen consisted mainly of lobulated tumour tissue infiltrating between muscle bundles. It was more reddish brown than fat. Histologically the tumour consisted of fat cells that varied considerably. Some approached the adult type but others had a rounded outline and contained cytoplasm of fine foaming granules of fat (see Fig.). The tumour was not well encapsulated, and there was an intimate relation between the tumour elements and the muscle bundles. The tumour resembled a hibernoma, but in view of the intimate infiltration between muscle bundles it was treated as a form of liposarcoma.

Photomicrograph of tumour.

As a result the residual tumour bed was irradiated with megavoltage x rays to a dose of 4,500 rads in five weeks. The geometry of the treatment fields had to be carefully arranged to avoid irradiating the spinal cord. This hampered a radical approach.

The patient was finally discharged from hospital on a regimen of cyclical oestrogens. At follow-up clinic she remained well, and there was no evidence of tumour recurrence. In addition she had her first episode of breakthrough menstrual bleeding after four and a half months on a priming dose of ethinyloestradiol.

Case of Mumps Nephritis

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An association between mumps and renal involvement has been infrequently reported. In a series of 20 cases of mumps in Servicemen, Utz *et al.* (1964) reported demonstrable transient renal impairment in all cases. There were no symptoms. In all previously reported cases of mumps in which symptoms of renal damage have been present, death has occurred.

CASE REPORT

The patient, a girl of 15 years, weighing 7 st. 3 lb. (45.8 kg.), was admitted to hospital on 15 January 1967. She gave a history of bilateral parotid mumps two weeks previously. She had been a contact. Her presenting symptoms were enlarged cervical glands, intermittent vomiting, fever, and a petechial rash on the right forearm accompanied by periorbital oedema of four to five days' duration. The latter two features developed some 24 hours after a dose of Metatone (a proprietary preparation containing vitamin-B complex, glycerophosphate, and strychnine), prescribed by her general practitioner for listlessness. No other drug history was elicited.

COMMENT

Since the description by Turner (1938) of seven examples of sexual infantilism, congenital web neck, and cubitus valgus in females of short stature many additional abnormalities have been described (Lemli and Smith, 1963).

Hibernoma, or brown fat lipoma, is a rare variant of simple lipoma. Only a small number of cases have been reported in the literature (Sandison and Graham, 1959). The tumour arises in brown "hibernating" fat usually found only in human embryos and hibernating animals. The brown fat lipoma has always been described as a simple tumour. So far as we know this is the first report of malignant degeneration in this tumour.

The infrascapular site of the tumour is of interest, since it is mainly in this site that brown fat is found in mammals (Dawkins and Hull, 1964). Moreover, at one time the hibernoma was called the interscapular tumour.

The unusual occurrence of a rare tumour in a patient with Turner's syndrome is of added interest, since it is recognized that chromosomal damage can lead to malignant disease. In addition, recent studies suggest that certain cancers and congenital defects occur together more often than can be attributed to chance (Miller, 1966).

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Flitting knee arthralgia was present for a period of 24 hours after admission. There was no recent cough or sore throat.

She had been admitted to hospital with abdominal pain seven months previously. Spontaneous remission occurred 24 hours later. She was allergic to sticking plaster, but no other history of allergy was obtained.

On clinical examination she was flushed, with an oral temperature of 103° F. (39.4° C.). The tongue was dry and furred. Also evident was bilateral non-tender cervical adenitis and parotid fullness. Petechial haemorrhages were present on the roof of the hard palate and right antecubital fossa—the Hess test was positive on two successive days. On admission her pulse was 110/minute and her blood pressure 110/70 (see Fig.). Clinically, there was no evidence of tonsillitis or pharyngitis. At no stage did she have pretibial oedema. Her temperature was raised for the first 24 hours only.

In spite of a poor fluid output in the first 36 hours, her fluid balance throughout remained reasonable apart from impairment of urine concentration initially. Daily ward urine analysis showed varying amounts of blood and albumin. Early morning midstream specimens produced from a few to numerous red blood cells on microscopical examination. Protein content of urine varied from 0.5 to 2 g./24 hours. Two specimens were productive of occasional granular casts. No pathogen was isolated from the urine. Blood urea and erythrocyte sedimentation rate (E.S.R.) were raised for the