AMENORRHOEA AT STANLEY CAMP, HONG KONG, DURING INTERNMENT

BY

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Amenorrhoea is well known to occur as the result of emotional shock, change of environment, and metabolic disturbances, either nutritional or endocrine. A situation in which all these factors may have been operative upon a large number of women, and which gave rise to amenorrhoea in over half of them, is worthy of record.

A month after the fall of Hong Kong on Dec. 25, 1941, British civilian subjects were interned in Stanley Camp. Periodical medical surveys were conducted in order to ascertain the state of health and nutrition of internees. The following is a summary of the menstrual histories which were obtained at the time of the first medical survey of 655 women made in July/August, 1942:

Group 1:	Post-menopause	205
" 2:	Amenorrhoea of pregnancy and lactation	14
" 3:	Regular menstruation	152
" 4:	"Irregular" menstruation, with increased frequency of menstrual periods, and menorrhagia	20
" 5:	Amenorrhoea:	
	(a) Delay up to 60 days	30
	(b) Delay for over 3 months	234
		264

Omitting groups 1 and 2, a survey of the remaining 436 women between the ages of 15 and 45 years, who would in normal circumstances be menstruating regularly, reveals that only 34.86% had regular menstruation; 4.59% were irregular, with menorrhagia, and 60.55% had amenorrhoea (53.67% with amenorrhoea for more than three months). Absence of menstruation was a convenience, especially in the early months of internment, and treatment was given only in cases presenting symptoms of discomfort.

Symptoms and Treatment

(a) The most constant symptom was excessive gain in weight in the form of flabby unhealthy fat. This was in marked contrast to the majority of women in camp, who lost weight. The patients suffering from excessive gain in weight with amenorrhoea were usually young women, and, although the chief reason for this condition was probably the unaccustomed excessive rice diet, it was considered that thyroid deficiency might also be a factor.

(b) In other patients the chief symptoms were nervousness and irritability or depression at the time the period would normally be due, sometimes associated with distension and discomfort in the abdomen. For these it was considered that additional ovarian stimulation might be of use.

Our supplies of drugs were very limited. We had small quantities of thyroid extract and of menformon injections. Group (a) were treated with the former and group (b) with the latter. Some patients received benefit from the treatment, but, owing to scarcity of drugs and of facilities for investigation, the results were inconclusive.

Length of Period of Amenorrhoea

Of the 234 women with amenorrhoea for more than three months, 81 had restarted menstruating within six months, and all except six had menstruated within 18 months (i.e., by May, 1943), although a number stopped again in the early months of 1944. Six women were known to have had amenorrhoea through the whole period of internment—i.e., 45 months. I have been able to get into touch with two of them since arriving in this country. In one patient menstruation restarted after 48 months without treatment, following a stay on a farm with good fresh food. The second patient was under treatment for three months, and menstruation was re-established after 51 months' amenorrhoea. (This patient had lost her husband in the fighting in Hong Kong on Dec. 25, 1941.)

It is interesting to note that a number of women between the ages of 45 and 50 ceased menstruating in December, 1941,

and had amenorrhoea throughout the internment. These cases were considered to be menopausal and are not included in the "amenorrhoea" figures, although they were surprisingly free from any menopausal symptoms other than amenorrhoea.

Possible Causes for Cessation of Menstruation

The emotional shock of war and internment, with the change of environment and occupation, was no doubt the initial cause of the amenorrhoea. It is difficult, however, to attribute to this factor alone so long a period of amenorrhoea as a year or more in many cases, although the food factor could not have come into the picture until later; for in most instances amenorrhoea dated from December, 1941, before the effects of undernourishment on general metabolism could have been manifest.

Undernourishment, especially deficiency of proteins (either "first-class" or other proteins); also possibly vitamin deficiency. The protein content of the rations never reached the normal minimum requirement, but it came nearest to this after a Red Cross shipment reached us in November, 1942, containing a large supply of tinned meat. Apart from this welcome addition to our protein, which lasted for about six months, we were about 30 g. per day below the minimum requirement of 75 g. per day, the chief shortage being in animal protein. From December, 1942, to May, 1943, even the most resistant cases of amenorrhoea, with the exception of six, cleared up. Some meat or fish was included in the Japanese rations for the remainder of 1943, but in January, 1944, meat stopped, and did not reappear in the menu until the last eight weeks of our internment. For a few months in 1945 even the fish supply disappeared entirely, and our only proteins were obtained from soya beans and root vegetables. The average value of the rations amounted to about 1,600 calories daily, of which 1,200 were derived from rice. The second "wave" of amenorrhoea started in the early months of 1944, after the meat ration ceased. It may be argued that our poorer Chinese patients who came to gynaecological clinics before the war were not suffering from amenorrhoea, although they were living on a diet similar to ours, but the change in our diet had been sudden both in quality and in quantity.

Summary

In Stanley Internment Camp, Hong Kong, from January, 1942, to September, 1945, 53.67% of the women between the ages of 15 and 45 suffered from amenorrhoea of more than three months' duration.

A few women presenting symptoms of discomfort were treated with the available drugs—namely, thyroid extract and menformon injections.

Within six months 81 women had started menstruating again, and within 18 months menstruation was re-established in all except six cases, which persisted throughout the period of internment.

Possible causes of amenorrhoea are discussed under the headings of (a) emotional shock, and (b) undernourishment with special reference to protein deficiency.

Medical Memoranda

Delayed Appearance of a Syphilitic Chancre after Penicillin

Because of the curative effect of penicillin on syphilis, it is reasonable to suppose that a small dose may delay the onset of the appearance of a primary syphilitic chancre. It has been shown that the amount of penicillin usually given for cases of gonococcal urethritis is sufficient to destroy surface spirochaetes and lead to the partial or complete healing of a syphilitic chancre.

Walker and Barton (1945), in a review of cases in which a papule had already been noticed, only stress the temporary masking of the primary state, and maintain that all patients should be observed for at least twelve weeks. Cronin (1945) describes ten cases of gonorrhoea treated with penicillin in which syphilis subsequently developed. In his cases the average time interval from penicillin treatment to the appearance of the chancre was 38.9 days, and from the probable date of exposure 47.2 days. He suggests that the incubation period may have been delayed by days rather than weeks, and therefore that surveillance of penicillin-treated cases of gonorrhoea