Medical History

Hospital life a century ago

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About a hundred years ago, in March 1877, a 29-year-old woman from Shetland, Margaret Mathewson, was admitted to the Edinburgh Royal Infirmary suffering from a tuberculous infection of the shoulder joint. One month after she was admitted Lister, then professor of clinical surgery in Edinburgh, carried out an excision of the shoulder joint, and seven months later she was discharged from the Infirmary; her state on discharge was optimistically entered in the hospital records as relieved.¹

On her return to her home on the island of Yell (fig 1) Margaret Mathewson wrote an account of her experiences in the Infirmary.² According to the preface she did so for two reasons. Firstly, being a devout and pious woman, she wished to support the faith of those falling under adversity, and, secondly, by describing what life in hospital was really like, she hoped to encourage others to follow her example when in need of similar help. As a result her manuscript paints in vivid colours a picture of the everyday life of a hospital patient in a Scottish hospital at the beginning of the last quarter of the 19th century.

Admission

Before being admitted to the Infirmary Margaret Mathewson required an introductory note, and this she acquired from her parish minister the Reverend James Barclay. On Yell there was no doctor, but James Barclay was the son of a surgeon,³ and having medical interests he provided medical as well as spiritual care to his parishioners. A few weeks before he had opened an abscess in Margaret's upper arm, and the failure of this incision to heal was one reason for her seeking help in Edinburgh.

On arrival at the Infirmary (fig 2) Margaret sought advice from the porter at the main gate as to who she should consult about her swollen shoulder and was directed to Lister's ward. The right of admission to the Infirmary lay with the surgeon, and there was no requirement, as in the earlier days of the English voluntary hospitals, to appear before a lay

board of governors in order to gain admission.⁴ There was, therefore, need only for a medical assessment, and Lister, after seeing her in his outpatient consultation and deciding that something could be done for her, admitted her.

Margaret was taken from the outpatient room to the ward not by a nurse but by Lister's house surgeon, Watson Cheyne. There was a large fire burning in the fireplace in the ward, and she sat down by the fire to warm herself. Looking about her she found the ward attractive and friendly. There were nine beds in it, and "all the beds had nice white covers on, clean pillow cases, and clean sheets, and the room so tidy and neat." The floor under the beds was of wood, but down the centre of the ward were flagstones, on which stood a large table with lotion bottles and dressings at one end. On special occasions—for example, to

FIG 1—Mid Yell, the main centre of population on the Shetland island of Yell, which was Margaret Mathewson's home. Photograph was taken in about 1880 by George Washington Wilson, the Aberdeen photographer.

welcome Lister back from one of his journeys to London before he moved to King's College—bowls of flowers were placed on the table to brighten the ward. On the walls, which were about eight feet high, were eight pictures in frames, and above the fireplace a small bookcase full of books for the use of the patients and a copy of the rules of the house. In the upper part of the walls were four vents for ventilation and to the front of the building three large windows. Between each bed stood a small high-legged table for meals, books, and personal articles, and beneath the windows were two drawers for the use of the patients, where those who were not in bed could keep their clothing.

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FIG 2—The old surgical block of the Royal Infirmary of Edinburgh, where Margaret Mathewson was treated. It was formerly the High School of Edinburgh and now houses the geography department of Edinburgh University.

In a few minutes the nurse in charge of Lister's female ward, Mary Logan, came into the ward to welcome her. Mary Logan—"blue eyed and bright of face" as Henley described her—was the model of W E Henley's poem "The Young Staff Nurse," this being the title used in the Infirmary in Lister's day for the nurse in charge of wards. The introduction of the English title of sister was a much later innovation and one not altogether approved of by the older generation of Edinburgh surgeons.⁵ Mary Logan wrote Margaret's name on a card, helped her to pull off her boots, and told her to make herself at home, "for we are very homely and social here." So indeed it proved, and the sketch is full of accounts of conversations with various patients, usually of an elevated character, jokes between patients, and "japes" played by nursing staff.

A patient's day

For the late 19th-century patient the day began early—at half past five in the morning. As in earlier times the patients still had to help with the work of the ward,⁴ and on being wakened those who could get up were expected to make themselves useful in cleaning and tidying up the ward. After breakfast they were again set to work preparing dressings. Bundles of gauze had to be torn into strips 20 yards long of varying widths up to three inches to make bandages. These were smoothed out before being rolled up on a small hand-operated machine made for the purpose and kept on the ward. For Lister's dressing technique many bandages were needed, and the rolled bandages were piled into baskets for use later in the day. At 10 o'clock patients began to arrive at the surgical block to see Lister, and between eleven and half past there was great commotion as the medical staff and visiting doctors drove up to the door in their carriages, and students "by the score" walked down from the college arm in arm. Finally the two professors—Lister and James Spence—drove up, each in his own carriage. By noon quiet was restored. At that hour Lister, accompanied by his house surgeon and 40 or more students, visited the wards to examine patients and dress the major wounds. After Margaret's operation, for example, Lister himself undertook all the dressings of her shoulder so long as he was in Edinburgh. At about one o'clock Lister left the wards to go up to the theatre to operate or give one of his popular clinical lectures to the students. In the early afternoon the students employed as dressers undertook the dressing of both inpatients and outpatients, and at five o'clock visitors were admitted for an hour and a half, a bell being rung to tell them when it was time to leave. At a quarter to eight the staff nurse said prayers in the ward, and at eight

o'clock all patients who were up returned to bed. At half past eight the night nurses came on duty, and thereafter the patients were expected to settle down to sleep. To those used to late hours this proved difficult, and Margaret records that often when the house surgeon and the nurse came round the ward she would "just pretend to be asleep to avoid being questioned."

Nights, however, were not always undisturbed. The ringing of the "alarm bell" would announce the arrival of an accident case, and there would be great noise and confusion, "people shouting, some lamenting, and some moaning with pain, some running to and fro, horses prancing about, and cabs coming to the door." For the more desperate cases Lister himself would be summoned, but often little could be done. On one occasion Margaret was awakened by screams outside the window of the ward and cries of murder. She and the other patients were much alarmed, but the night nurse reassured them, explaining that it was only "some drunk man kicking his wife down the Cowgate, the police will soon be after them and they can't get over our big walls."

The week

Some days of the week had special events. On Wednesday evenings there were concerts. A piano was hired at the cost of a guinea an hour, and a concert was held from seven to eight o'clock "for the special benefit of the patients to keep their spirits up." These concerts were much appreciated by most patients, but to a serious young woman such as Margaret they were "quite repugnant." When she later attended two at the convalescent home she did so "with much aversion." On Saturday evenings there was washing. Any children in the ward were bathed, and the feet of the adult patients were washed. The mobile patients washed their own feet in the "scullery," while those of patients restricted to their beds were washed by the nurses. On Tuesdays and Fridays all the beds were changed and the patients' personal clothing washed. The patients were allowed "to put one bed gown and chemise to each washing," each garment having first to be marked with an identifying mark.

Margaret was a little surprised that work continued on Sundays as on other days, that patients came to be seen by the surgeons, and that some of the more serious operations were sometimes reserved for that day. Indeed, it was Lister's custom to visit his wards each Sunday after morning service, and his dressers found this a valuable teaching session, for on these occasions they alone were with him, and there were no other students or distinguished visitors present.⁶

Despite the secular activities of the Sunday, however, religious observances featured quite prominently in the lives of the patients. For Margaret it was reassuring when, on the first Sunday she was in hospital, one of the dressers came into the ward in the morning with bible and hymn book and conducted a ward service, preaching a sermon on the man with the withered arm, a subject she thought particularly apposite to herself. On Sunday afternoons there was a service held in the Chapel, a room in the "Medical House," which all the walking patients could attend. The chaplain to the surgical wards and the chaplain to the medical wards took the service on alternate Sundays, and the patients sat in groups—those from the medical wards, those from the surgical wards, and those from the "eye" wards. There were also short services held on the wards three days in the week, when the chaplain visited the wards and spoke to each patient. Of Mr Gray, the chaplain to the surgical wards, Margaret and her evangelical friends thought highly.

Unlike most hospital patients Margaret makes no adverse comment on the food she received in hospital. There were four meals in the day—breakfast, dinner, tea, and supper. Breakfast was early in the morning, shortly after the patients got up, and consisted of a bowl of porridge and milk. Dinner, just after one o'clock, was generally a bowl of soup followed by

meat and potatoes. At half past four there was tea with bread and butter, and at half past seven bread and milk for supper. As a diet it may have been reasonably nourishing, but for the patients, many of whom spent many months in hospital, it cannot have been very exciting.

The grimmer aspects

But if the diet was not exciting, other things were—often unpleasantly so. The 19th century ward was not a place in which the patient could be shielded from unpleasant experiences. Lister preached the need to do so—he would never allow a tray of instruments to be uncovered in the sight of a patient⁷—but that standard of thoughtfulness could not always be maintained. For example, operations were periodically carried out on the ward. One of Margaret's friends, in the bed beside her, developed a tuberculous abscess, and this was opened by Lister on the ward. The bed was drawn across the ward to the window, the patient anaesthetised, and the operation carried out. Margaret "kept the sheet over [her] face for a while, and was much affected by knowing what was being done." When the bed was brought back she saw the blood on the floor and "grew so weak" she almost fainted. The young woman who had been operated on was revived from the anaesthetic by being slapped on the face and breast with a towel dipped in cold water. She survived the operation, but a few weeks later she developed severe headache with confusion and, lapsing into coma, died.

What remedy is there for an adult who bites his nails when stressed?

Nail-biting is always a symptom and never a disease entity per se. In infancy and childhood it takes its place with, for example, nose-picking and, to a lesser extent, thumb-sucking for reducing inner tensions. In most cases these symptoms pass off with age or when the emotional difficulties are resolved. Persistence into adulthood of any or all of such symptoms is always significant. In this case it is not stated if the nail-biting has persisted since childhood, although probably it has. Relapses occurring under stress indicate that old-established means of dealing with it are reactivated. The remedy—and this is not going to be easy to come by—is to treat the underlying emotional maladjustment. Painting the nails with unpleasant tasting or smelling substances is doomed to failure.

Do ampicillin and several other drugs including, I think, anticonvulsants interfere with the action of the pill?

Many drugs can induce enzyme activity in the liver. If such enzymes increase the rate of metabolism of the oestrogen in the combined pill then its efficacy tends to be reduced. The matter is complex and not to be dealt with in a short answer.¹ The effect of the enzyme induction may vary with the exact steroid contraceptive pill and its composition. There is good evidence¹ that rifampicin interferes with the pill's action, so allowing pregnancy, breakthrough bleeding, and menstrual disorders. The evidence about ampicillin, neomycin, phenoxymethylpenicillin, and nitrofurantoin is less clear clinically, though ampicillin may reduce the urinary output of oestriol. Barbiturates and anticonvulsants have been associated with pill failure, resulting in pregnancies and bleeding problems. Even analgesics, tranquillisers, and antimigraine preparations are under serious suspicion of interfering with the pill's actions. The article by Stockley¹ also details the effects of oral contraception on other types of drug treatment, including anti-asthmatics, anticoagulants, anticonvulsants, tricyclic antidepressants, guanethidine, vitamins, and hypoglycaemic agents. It should be widely read, and so should another on the same theme.²

¹ Stockley, I, *The Pharmaceutical Journal*, 1976, **216**, 140.

² Robertson, Y R, and Johnson, E S, *Current Medical Research and Opinion*, No 9, 1976, **3**, 647.

So far as Margaret Mathewson was concerned Lister's operation proved remarkably successful. When she wrote her account two years afterwards she could boast that she could use her arm to do any kind of indoor work. But the basic infection remained, and on 28 September 1880 she died, at the age of 32, the cause of death being certified as consumption of the lung.⁸ As so often at that time, the tubercle bacillus had conquered in the end.

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- ⁸ Death Certificate of Margaret Mathewson. Register House, Edinburgh.

A woman aged 84 has developed lung cancer. A life-long non-smoker she has been having gold injections for rheumatoid arthritis for 20 years with good effect and has remained mobile. Might the treatment be implicated in any way?

It is necessary to know the histological type of the cancer. If it is an adenocarcinoma an association is unlikely; if a squamous cell or oat-cell carcinoma then the possibility of gold as a cause might be considered. Two patients developed interstitial pneumonitis while receiving gold injections for arthritis and recovered when the gold was stopped.¹ Alveolar cell carcinoma has been reported in patients with various types of interstitial pulmonary fibrosis,² so it would be interesting to know whether the patient had had previous lung trouble. It is well known that miners of many different metals have a higher mortality from lung cancer than usual, but this has usually been attributed to the effects of arsenic in the dust or radioactivity together with heavy cigarette smoking.

¹ Winterbauer, R H, Wilske, K R, and Wheelis, R F, *New England Journal of Medicine*, 1976, **294**, 919.

² Douglas, A, *Tubercle*, 1972, Suppl **53**, 591.

Can hepatitis B be transmitted sexually?

Considerable circumstantial evidence implicates sexual contact in the transmission of hepatitis B virus infection. Hersh *et al*¹ reported six cases in which hepatitis B appeared to be transmitted from men with either acute or chronic HBsAg-positive hepatitis to their female sexual partners. Heathcote and Sherlock,² in an epidemiological study of the spread of acute type B hepatitis, noted that in 40% the presumed source of infection was sexual or domestic contact. In this non-parenteral group of patients, in contrast to the remaining cases, there were more women than men. HBsAg has been identified in semen,³ but in very minute amounts, and the infectivity of semen has not been definitely established. Evidence is now accumulating to suggest that e antigen, which is found in only some cases of both acute and chronic hepatitis, is a marker of infectivity⁴ in patients who are HBsAg positive. There are no studies, however, relating e antigen with the likelihood of non-parenteral transmission and the presence of e antigen in semen has not been looked for.

¹ Hersh, T, *et al*, *New England Journal of Medicine*, 1971, **285**, 1363.

² Heathcote, J, and Sherlock, S, *Lancet*, 1973, **1**, 1468.

³ Heathcote, J, Cameron, C H, and Dawe, D S, *Lancet*, 1974, **1**, 71.

⁴ Okada, K, *et al*, *New England Journal of Medicine*, 1976, **294**, 746.