One other interesting point emerged from these investigations which had stimulated an animal-lover to report that she had visited the breeder's premises on one occasion and had fondled the cats. She then developed a patch of ringworm on her thigh 17 days later, and a second patch appeared near the original site in a further five days. This gives an incubation period of 17 to 22 days. The affected part of the thigh was that area where a finger-nail would rub when adjusting a stocking suspender.

Comment

The high infectivity rate is notable—93% of children and 30% of adults exposed being affected. It was considered that the degree of exposure was responsible, as the kittens would be frequently fondled by the children, while their mothers performed the daily combing of the long hairy coat.

The fact that scalp lesions due to *M. canis* regress at puberty (Kligman and Anderson, 1951), "albeit slowly," has given rise to the impression that adults are relatively resistant to this type of ringworm. The present outbreak does not lend support to this view, as both adult humans and cats were infected, and it would appear that the degree of exposure might be the factor responsible for the difference in age incidence. Most of the lesions occurred on the glabrous skin, whereas a high percentage of *M. canis* infections seen in hospital practice occur on the scalp. This would suggest that the real incidence of this infection is generally greatly underestimated, as the body lesions, being easily treated, never reach hospital clinics.

The circumstances of the outbreak produced an excess of females over males infected, in contrast to previous outbreaks described (Beare and Cheeseman, 1953), where boys were more commonly affected than girls (ratio 2 : 1). However, in these cases stray cats were usually traced as the source of the infection. The sex incidence of scalp infection shows a higher percentage of boys, because the long hair of girls protects the epidermis of the scalp.

All the cases occurred within a few weeks of the arrival of the kitten in the household, and were obvious kitten-to-child transmissions. No case of child-to-child transmission was noted, and no further cases occurred after the infected kittens and cats had been destroyed. This would suggest that child-to-child transfer may be an even less important factor in the spread of the infection than noted by Duncan (1945) and that the main source of infection is the infected kitten or dog. General practitioners, while generally adept at diagnosing the ringworm infection, were unwilling to point suspicion at the recently acquired expensive kitten—perhaps the name *M. canis* is misleading. Some of the new owners, however, suspected the kittens and brought them to experienced veterinary surgeons. As the kittens all appeared clinically free from any infection they were returned to their owners, who were reassured. This confirms the advice given by La Touche (1952) that all kittens and cats associated with human cases of *M. canis* should be examined under Wood's light, as generally there are no obvious clinical lesions. In dogs and puppies, and sometimes with short-haired cats, the condition is more apparent, as depilated or desquamated areas are frequently present.

The necessity for close co-operation between the health department and local veterinary surgeons when cases of *M. canis* infection arise is stressed so that no affected animals are missed. As frequent false types of fluorescence are seen, anybody using Wood's light should be familiar with the typical pale-green fluorescence which is given by hairs affected with the microsporum fungus.

We realize that the condition often undergoes a spontaneous cure, but are unaware of any proved treatment for the infection in cats and dogs. As the fungus can remain dormant in the spore stage for up to a year, special difficulties arise when the condition occurs in breeding catteries or pet shops, and it then becomes a special problem for the local health authorities.

Summary

An outbreak of ringworm due to *Microsporum canis*, giving a high infectivity rate (93% children and 30% adults affected) and unusual sex distribution (M./F. 1/3.4), is described.

Epidemiological investigations revealed the source of the outbreak.

An opportunity to confirm the incubation period (17–22 days) is noted.

The necessity of ascertaining and dealing with the animal reservoir as the essential factor in controlling this infection is stressed.

The role of a cattery in spreading infection throughout a community is noted.

Our thanks are due to Dr. J. Martin Beare (who referred the original case) for his assistance in compiling this report; Dr. V. D. Allison and the staff of the Northern Ireland Public Health Laboratory for isolating and culturing the fungus; local general practitioners and veterinary surgeons for their close co-operation; and Dr. J. B. McKinney, Dr. W. G. Swann, and Dr. S. Hayes for permission to publish this report.

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Medical Memorandum

Traumatic Aneurysm Treated by Excision, and the Effect of Chlorpromazine

The following two cases are recorded in view of the increasing interest in the surgery of aneurysms. Both, moreover, were unusual in site. One followed a trivial commonplace injury, and the other presented interesting anastomotic features. The most satisfactory treatment for aneurysm is excision, preferably with arterial replacement, for which a prepared artery or plastic tube is required. If excision is impracticable then an obliterative operation may be attempted or the aneurysm ligated proximally or distally. Excision alone seemed to be indicated in our cases, neither stored arteries nor suitable plastic material being available for replacement.

In the treatment of subclavian aneurysms the record in the past has been a poor one and history has recently been summarized by Moloney (1955). The greatest dangers lay in operative blood loss and in the effects of sepsis. Proximal ligation alone resulted in considerable mortality. Excision was practised on occasion. Saigo (1906) was the first to excise an aneurysm of the subclavian artery successfully, and Herzen (1910) recorded a further case. Von Haberer (1915), Braithwaite (1920), and Moloney (1955) each excised an aneurysm at this site with recovery of the patient.

CASE I: ANEURYSM OF THE SECOND PART OF THE RIGHT SUBCLAVIAN ARTERY

On January 12, 1956, a 30-year-old married Chinese was involved in a fight during which a penknife was plunged into his neck above his right clavicle. He was admitted to hospital suffering from haemorrhage from this wound, where it was noted that the posterior triangle on the injured side of the neck was tense with blood clot. A little blood still oozed from the wound. The right radial pulse was palpable but feeble. He was transfused, a pressure dressing was applied above the right clavicle, and he made a steady recovery. The skin wound was not sutured.

During the course of the next three weeks the skin wound healed, and the swelling in his neck became firmer, smaller, and pulsatile. A bruit was detectable over it. Compensated mitral stenosis was also noted. A saccular aneurysm of the subclavian artery was diagnosed. On February 6 the aneurysm slowly began to increase in size. The right radial pulse remained palpable though diminished in force, and there was no interference with brachial-nerve conduction. The aneurysm was explored on February 11.

Operative Details.—Anaesthetic (Captain Boyes): chlorpromazine hydrochloride 50 mg., promethazine 50 mg., pethidine 100 mg. (all three given fifteen minutes pre-operatively), thiopentone 0.4 g. Endotracheal tube used and N₂O + O₂ given throughout. Pethidine was given intermittently. A large drip cannula was inserted into the left cephalic vein at the shoulder and two pints (1.14 l.) of

Diagram showing the aneurysm, the costo-cervical trunk opening into it posteriorly, and the transverse cervical artery preserved as the only anastomotic vessel before excision of the sac. The points of main vessel ligation are also shown.

blood was given at varying speed during the operation. The root of the neck was exposed on the right side by Henry's incision and method, the clavicle and sternomastoid muscle being divided and the shoulder allowed to fall outwards. The aneurysm of the second part of the subclavian artery was confined by the scalenus anterior muscle and surrounded by thickened inflammatory tissue; it was saccular in type (see Diagram). The sac was then opened and a considerable resulting haemorrhage was checked by packing the sac with gauze. Intravenous blood was administered under pressure. The distal end of the main artery was then closed from within, using thread sutures on a needle, but bleeding continued from the costo-cervical trunk, the mouth of which opened into the sac. This was similarly dealt with. The field was now quite dry and it was a simple matter to remove the aneurysmal sac.

The patient's progress was uneventful and he left hospital five weeks later. When examined two months later he complained of pain at the site of division of the clavicle. The right arm and hand were normal, and a faint pulsation could be detected in the radial artery at the wrist.

CASE II : ANEURYSM OF LEFT SUPERFICIAL TEMPORAL ARTERY

A Welch Fusilier was admitted to the Military Hospital, Kluang, on March 26, 1956. He had been on a jungle patrol when a branch of a tree swung back and hit him heavily on the left temple. He was "dazed" but not concussed, and later that evening he noticed a painful lump on the side of his head.

On examination he had a lump the size of a glass marble just in front of and above his left ear. This lump showed expansile pulsation but could not be made to collapse by occluding any surrounding vessel. A skull x-ray film was negative. Otherwise he was quite normal. A diagnosis was made of aneurysm of the superficial temporal artery.

Operation (April 4).—The swelling was encircled by an incision, and the resulting scalp flap retracted backwards. A saccular aneurysm of the superficial temporal artery was uncovered. The temporal vein was intact but was stretched over the aneurysm. The tumour was excised after ligation of both the artery and the vein above and below it. The scalp was then closed. He made an uninterrupted recovery.

COMMENT

We have been unable to trace references to traumatic saccular aneurysm of the superficial temporal artery, and it seems surprising that this lesion does not occur more often at that exposed site. The resemblance of this type of aneurysm to a sebaceous cyst may be a trap for the unwary—with dangerous consequences.

The result following excision of the subclavian aneurysm was gratifying, considering that the transverse cervical artery and minute thoracic vessels alone provided the collateral circulation in the shoulder region. It is likely that this meagre collateral supply was opened to its utmost by the four-weeks delay between wounding and formal operation. Few available collaterals had been damaged by the injury, and the virtues of a waiting policy in this type of lesion are generally accepted. It should be added that Henry's exposure proved very suitable for the large vessels at the root of the neck, but that division of the clavicle gave rise to a good deal of post-operative pain.

Thanks are due to Colonel R. Stephen, Consultant Surgeon FARELF, and to Lieutenant-Colonel J. Irvine, O.B.E., for permission to record these cases, and to the Sisters and Malay orderlies who assisted in their care.

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The seventeenth congress of the International Society of Surgery was held in Mexico City from October 20 to 27, under the presidency of Professor WOLFGANG DENK, of Vienna. Over 300 surgeons from 22 countries, including a delegation of 21 from Soviet Russia, attended. Those from Britain included Professor LAMBERT ROGERS (Cardiff) and Mr. G. H. McNAB and Mr. M. H. Harmer (London). The main theme of discussion was cancer. An outstanding contribution was that by Dr. E. L. Wynder (New York), who, in tribute to the late Dr. Evarts Graham, of St. Louis, dealt with the epidemiology. Dr. Wynder believed that many lives could be saved if attention were paid to what he regards as now well-established facts: for instance, reduction in cigarette smoking would reduce the incidence of lung cancer, and circumcision of infants that of cancer of the uterine cervix. Mr. Harmer reported on the results of adrenalectomy in breast cancer at the Royal Marsden Hospital and on the value of combined surgery and radiotherapy on cancer of the mouth; Professor Lambert Rogers on malignant tumours of the spine and spinal cord; and Mr. McNab on cancer in childhood and on hypophysectomy combined with radiotherapy in metastatic cancer of the breast.