ALOPECIA TOTALIS
FOLLOWING SUICIDAL COLCHICINE OVERDOSAGE

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Introduction
Since the beginning of the century there has been a change in the pattern of suicide, associated with an increasing number of suicidal attempts. The more violent methods of self-destruction still occur, but there has been a marked rise in the proportion of attempts involving the less painful intoxications by coal-gas and drug overdosage. Simpson (1961) has charted the increase during the past fifty years in the use of coal-gas and such therapeutic drugs as the barbiturates and aspirin, at the expense of lysol and the corrosive poisons. In a recent review of accidental and self-inflicted poisoning, Nicholson (1963) emphasized the pre-eminence of these two groups of drugs, but also described a variety of other therapeutic agents such as liniment, “asthma cure” and insulin which had been used in suicidal bids.

This swing to drugs in normal medical use can be related to the increased number and availability of such preparations, together with the retention in most households of a stock of half-filled, unlabelled containers. Where such drugs are employed in an attention-seeking or gain-motivated suicidal gesture, ignorance of the actual preparation and its action may produce unexpected and dangerous consequences. The case here described provides an example of a suicidal bid in which an unusual, potentially lethal agent, colchicine, was used in ignorance of its effects, with the development of an uncommon clinical picture and the occurrence of an almost total alopecia.

Case History
The patient, a private soldier aged eighteen years, had previously taken an overdose of Librium during his three months' service. On 21st April, 1963, whilst at home and reactively depressed by the recent death of his mother and his dislike of the Service, he swallowed 40 to 50 tablets of colchicine (10-13 mg.) and seven hours later became acutely ill, complaining of nausea, vomiting, diarrhoea and severe abdominal pain. He did not disclose his drug overdose until forty-eight hours later and was admitted to the Royal Victoria Hospital, Netley, on 24th April.

Clinical Examination. On examination, the patient was lucid and still complaining of severe pain and fatigue. His general condition was good and he was not dehydrated. His blood pressure, pulse and respiration were satisfactory; oral temperature was 99°F. The abdomen was held rigidly and there was generalized tenderness, with no localization or rebound tenderness; rectal examination disclosed some lower abdominal tenderness. Groups of glands in the axillae and neck were palpable but just within normal limits.

Laboratory Investigations. Serum electrolytes and plasma proteins were within the normal range; X-ray of chest and abdomen revealed no abnormality. On admission, his E.S.R. was 25 mm./hr. (Wintrobe); Haemoglobin was 92 per cent, with normochromic picture; total white cell count was only 2,800 c.mm. and it was impossible to perform a differential count. Eight days after ingestion of colchicine his routine blood count showed a dramatic reversal, and the W.B.C. rose to 14,500 c.mm., reached a maximum of 20,000 c.mm. with a marked shift to the left, and on discharge from hospital on 7th June had fallen to 8,400 c.mm., with an E.S.R. of 5 mm./hr.
Management and Progress. Initially the patient was treated conservatively; an oral monilial infection was treated with nystatin, and penicillin cover was commenced on 29th April, but discontinued the next day following a mild allergic rash. Eight days after his overdose he began to improve dramatically and within a few days was ambulant. On modified insulin treatment he gained 32 lb. during his admission and regained his enlistment weight. Hair loss, particularly from the frontal and occipital areas, was noted four days after admission and within a further two weeks he lost over 90 per cent of his scalp hair. (Photographs Fig. 1 and Fig. 2 were taken before enlistment and during admission respectively and demonstrate the degree of alopecia.)

Toxicology

Colchicum was first recommended for arthritic pain in the sixth century A.D.; colchicine itself was isolated in 1820 by Pelletier and Caventou, although its effects on cellular mitosis were not noted until 1889. It is most commonly employed in the treatment of gout, although it has also been used to treat psoriasis, mycosis fungoides, leukemia and Hodgkin’s disease: its action on human neoplasms has been reviewed by Levine (1951).

The average therapeutic dose is 0.5-1 mg. daily and death has taken place from doses of 7 mg. although recovery has occurred from more massive doses. The toxic symptoms are well described (Sollmann, 1957) and it is noted that their appearance may be delayed for three to six hours after ingestion. The most frequent complaints are of difficulty in swallowing and a burning sensation in the throat, of nausea and vomiting and of abdominal pain. There is colic and tenesmus, with spasm of the bladder and considerable prostration. Death occurs from respiratory paralysis and exhaustion.

Discussion

The toxic effects of massive colchicine overdose are rarely seen, although well recognized, and the clinical illness in this case followed closely the described pattern of delayed onset of illness, considerable prostration and gastro-intestinal symptoms. However, there were other additional points of interest, particularly with regard to the exclusion from the clinical picture of other and coincidental pathology. Thus the presenting illness, in the absence of the relevant details of drug overdose, was suggestive of an acute surgical abdomen, and the presence of enlarged glands, together with a marked leucopenia, raised the suspicion of an early leukaemia in an aleukaemic phase. Fuller investigation and the clinical progress did not, however, support these possibilities.

The leucopenia and a degree of anaemia that were a feature of this case are not invariably found with colchicine overdose. It is, however, consistent with the known anti-mitotic effect of the drug and was reported by Seed et al. (1940), who gave deliberately toxic doses of colchicine in four cases of inoperable carcinoma, with the production of classical symptoms, leucopenia and death in two instances.

A degree of alopecia following colchicine has been described before, although not apparently following a single dose as occurred on this occasion. Following some success with folic-acid antagonists, Malkinson and Lynfield (1959) treated three cases of psoriasis, which had become resistant to tar ointments and ultra-violet light therapy, with colchicine in daily doses of 1-3 mg. In each case, hair loss was noted approximately three weeks after treatment began. The amount of loss varied from “a mild, diffuse loss” to 50 per cent of the scalp hair, and occurred over a period of two to
three months. Colchicine therapy was continued and at the end of this period new hair began to grow. In none of these cases was a leucopenic picture found on repeated testing, and there were no other toxic symptoms. These authors further showed that the growth of new hair was inhibited in rats which were receiving colchicine. In each of these three cases the signs of hair loss were not apparent until three weeks after treatment began and the loss occurred over a period of several months.

In our patient hair loss was noted at the end of the first week and was complete within three weeks from the time of taking the drug. It is characteristic of most reported examples of colchicine alopecia that the loss is diffuse, mainly affects the frontal regions and is slight in amount. In this case the loss was virtually complete: this is not unknown, and Mikkelsen et al. (1956) have reported a single case of alopecia totalis following treatment of gout with desacetylmethyl-colchicine. In all the available reports of significant colchicine alopecia the drug has been given in therapeutic doses, with the development of few other toxic symptoms, and its administration has been continued throughout the period of hair loss. Eventually the hair appears to break free spontaneously from the inhibition of growth—an effect that has been reported with other drugs.

A search of available literature does not reveal a previous instance of a suicidal attempt with colchicine; Glaister (1962) does not record its use as a suicidal agent. The early occurrence, and rapid course, of hair loss in this patient may be postulated as the result of the single, large dose of the drug which was a feature of the case, and compared with the therapeutic doses given over a period of weeks in other reported cases. However, it is not implied that alopecia invariably follows a large overdosage.
Indeed, in the experiments of Seed et al. (1940), where totals of up to 28 mg. colchicine were given intramuscularly over a period of only four days, there was only slight hair loss recorded in spite of the development of acutely toxic symptoms.

**Summary**

A case is described of colchicine overdosage, self-administered, as a suicidal bid in an immature soldier. The presentation, management and progress of the case are detailed. A brief account of the known actions of the drug is compared with the observed clinical findings, and the occurrence of an almost total alopecia is discussed and illustrated by photographs. Possible alternative diagnoses are considered and certain differences in the presentation and course of this illness compared with previous reports.

**REFERENCES**


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**PEOPLE IN THE NEWS**

DR. WILLIAM NEVILLE MANN, who has been a physician to H.M. household since 1954, has been appointed a physician to the Queen on the death of Lord Evans. He has been a physician to Guy's Hospital since 1946 and was previously house physician, demonstrator of pathology and medical registrar there. He served throughout the Second World War in the R.A.M.C. with the rank of lieutenant-colonel, serving in the Middle East. Dr. Mann, who is married and has two sons and three daughters, was joint author of *The Medical Works of Hippocrates*. He is succeeded in his post to the royal household by Dr. Richard Ian Samuel Bayliss.

(Extract from *Medical News* of 27th March, 1964.)