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Self-applied Constricting Bands

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Introduction

Interesting accounts of injuries resulting from self-applied constricting bands have been given by Thurston (1963, 1967), Little (1965), Cutler (1967), Turney (1967) and Glew (1967). Callum (1967), Noott (1967) and Webb (1968) have reported injuries in babies where the band was presumably not self-applied. Cohen (1967) noted lesions in mental defectives produced by self-applied elastic bands round the teeth.

Kitchen *et al.* (1967) report two cases in detail. Both their patients exhibited a denial reaction to the bands. Pain is not referred to in one case, but the other complained of pain on walking. These authors postulate "unconscious motivation" underlying the self-inflicted lesions and presume that there was often a hope of gain. They refer briefly to seven of their other previously noted cases, bringing their total to six females and three males.

Dawson-Butterworth (1967) reported a similar lesion in a severely demented tabo-paretic. Seville (1968) has again raised the unsolved problem of motivation, and expressed doubts of its being a matter of simple forgetting.

We decided to investigate a psychiatric population in the hope that the disinhibition present in many mental disorders might help to throw light on the motivation of what is a more complex phenomenon than is apparent at first sight.

Method

The nursing staff of a large psychiatric hospital (1,825 beds) were asked to report any patient who during the previous two years had been found wearing an elastic (or other) band. Patients so reported were then interviewed in detail.

Results

The results are given in detail in Tables I and II. Twenty cases were reported, twelve females and eight males. This sex ratio is not significantly different from that of the total hospital population. The age range was 37 to 83 years, thirteen cases being over 45 years of age. Eight patients applied bands to more than one site. Location of bands was distributed among the cases as follows: head three, neck two, left hand seven, both hands three, waist one, thighs three, lower legs four, and penis one.

Diagnostically, the cases could be split into thirteen schizophrenic and seven organic cases. There was no significant difference between the diagnostic groups regarding site of application of the bands, although Cases five and fourteen were rather exceptional. All patients selecting one hand or one leg only, chose the left. In contrast to the cases reported in the literature, only three of our schizophrenic group chose the lower leg, the bands worn being neither tight nor thin. None of the four organic patients who were uninjured chose the legs, but two of the three injured ones did.

Elastic bands were used by nine patients either alone or in combination with string or cloth. The material used appeared unrelated to diagnosis.

The length of time the band was worn ranged from less than one hour (Case five) to more than seven days (Case three) and also showed no association with diagnosis.

All the five patients (three organic and two schizophrenic) who suffered actual tissue damage had worn the bands for from two to more than seven days. This had resulted in severe ulceration and in one instance (Case seventeen) early gangrene of the little finger. Case fourteen developed severe balanitis and oedema of the glans penis from repeated application of a tight cotton thread around the coronal sulcus beneath the prepuce. Of the remaining fifteen patients, thirteen showed only an annular depression of the skin and two no observable lesion.

TABLE I

The schizophrenic group

Pt. No.	Age	Sex	Site of band	Type of band	Duration worn	Lesion produced	Reaction to removal	Pt's reason for wearing band	Staff's interpretation of behaviour
3	82	F	fingers l. hand	cloth	>7 days	ulceration	strong objection, band removed by force	none given	probably delusional
4	70	F	head	cloth	12–16 hrs.	annular imprint	strong objection	to keep her head on	delusional
5	53	M	waist	string	<1 hr.	annular imprint	none	for erotic pleasure	masochistic
7	38	F	fingers, l. hand	cloth	12 hrs.	annular imprint	none	none given	masochistic
8	64	F	thighs	elastic	12 hrs.	annular imprint	none	none given	delusional ? masochistic
9	37	F	a. l. wrist b. legs	elastic cloth	12–24 hrs.	annular imprint	strong objection soon replaced	a. protective b. none given	talisman or magical protective value
10	61	F	a. neck b. wrists	string string	< 12 hrs.	annular imprint	none	a. to heal throat b. none given	talisman or magical protective value
11	49	F	a. over eyes b. over face	cloth cloth	12–24 hrs.	none	mild objection soon replaced	a. protect eyes b. stop face changing colour	delusional
15	56	M	l. wrist or forearm	elastic	1–2 days	annular imprint	none	none given	probably delusional
16*	67	M	l. thigh + arms and legs	cloth	4–5 days	annular imprint	replaced with ritual	prevent alien influence on body	delusional self-therapy
17	42	M	l. 5th finger	elastic	2–3 days	gangrene ulceration	reluctance	directed by internal voices	delusional (catatonic postures)
18	41	M	lower legs and arms	cloth and string	4–5 days	annular imprint	reluctance soon replaced	helps his skin	delusional
19	50	M	l. wrist	elastic	12 hrs. repeatedly	none	none soon replaced	for use at O.T.	?acquisitive

* Only this patient reported discomfort.

There seemed to be little difference between the patients who suffered substantial injury and those who did not, except for the choice of site and type of band. The legs and penis seem especially vulnerable to the effect of partial occlusion of the circulation. In Case seventeen the band was thick, very tightly applied and worn for over two days. It seems reasonable to assume that the longer the band is worn, and the tighter it is applied, the greater the damage. Elastic bands are more likely to produce rapid damage than string or cloth, but no doubt in each individual such variables as general nutrition and vascular patency play a part.

Removal of the bands produced protest from three organic and six schizophrenic patients. One schizophrenic exhibited a special ritual when replacing the band.

TABLE II

The organic group

Pt. No	Age	Sex	Diagnosis	Site of band	Type of band	Duration worn	Lesion produced	Reaction to removal	Pt's reason for wearing band	Staff's interpretation of behaviour
1	41	F	brain damaged	head	cloth	4–5 days	annular imprint	none	none given	probably for comforting
2	54	F	post-enceph. Parkinson.	neck	string	12 hrs.	annular imprint	none	none given	self-directed aggression
6	83	F	epileptic psychosis	hands	elastic	12 hrs.	annular imprint	none	none given	probably masochistic
12	46	F	G.P.I.	thighs	elastic	4–5 days	severe ulceration	objection soon replaced	none given	?delusional
13	42	F	brain damaged	a. l. wrist b. l. 2nd finger	a. elastic b. wool	2–3 days	annular imprint	objection soon replaced	a. stopped shortness of breath b. controlled heart	delusional or as talisman
14	43	M	subnormal and brain damaged	penis	string	3–6 days	ulceration balanitis (severe)	persistent replacement	none given	erotic activity
20	60	M	G.P.I.	l. lower leg	elastic	6–7 days	ulceration early gangrene	none	none given	probably masochistic

Only one patient (Case sixteen) out of the twenty reported any form of discomfort from wearing the bands and this was only occasional irritation. Nobody complained of pain.

Ten patients (six organic and four schizophrenic) offered no reason for wearing the bands. Eight (one organic and seven schizophrenic) gave a delusional explanation, the intention of one (Case nineteen) was possibly acquisitive and one (Case fourteen) probably erotic. The interpretation of this behaviour made by the staff differed somewhat from the patients' own explanation and indicated that five (three organic, two schizophrenic) may have had masochistic or erotic and twelve (two organic, ten schizophrenic) delusional or magical reasons.

DISCUSSION

The initial application of the bands must have been a deliberate act. The original purpose may have been acquisitive, supportive (functional for clothing) or what can loosely be described as delusional. It is difficult to accept that a patient merely forgets the presence of the band, since although habituation of the skin to pressure and ischaemic anaesthesia may occur the band itself or the resultant injury are clearly visible. (We may be unaware of our wristwatch strap for most of the time, but nevertheless we know it is there and can see it. Incorporation into the body image is never complete.)

An interesting feature is the role of pain in connection with this phenomenon. If a normal adult wears a tight elastic band pain and numbness soon become evident, with further pain if the ischaemia is relieved. In the literature no mention is made of pain in association with lesions, with the exception of the one case of Kitchen *et al.* (1967) where leg pain, probably ischaemic in origin, was noted. This situation was reflected in the present series: in no case was the presence of a band or lesion brought to the attention of the staff because of a complaint of pain by the patient. This suggests some breakdown of the normal defensive function of pain, since mechanical tissue damage of varying

degrees of severity was occurring in all cases. This may be related to the ability of some catatonic schizophrenics to tolerate pain-producing postures for long periods. Case seventeen was such an example and this patient suffered a severe lesion without any apparent distress. The frank cerebral pathology of the organic cases might well have accounted for the breakdown of this mechanism. It is worthy of note that the three organic and two schizophrenic patients who suffered severe tissue damage all showed marked intellectual deterioration.

It is uncertain whether the patient *expects* lesions to develop. This series showed no evidence of such expectation. However, the fact that a patient tolerates self-damage can mean only one of two things. Either he does not recognize (or has forgotten) the band as the cause of the lesion, or he does so recognize it but has delusional or important psychological reasons (for example erotic pain-pleasure) for retaining it, even at the cost of personal injury.

The psychiatric literature has remarkably little to say about an act which on the evidence of nursing staff experience was at one time quite widespread in psychiatric hospitals but is now much less common. This declining incidence may be related to the less severe deterioration among patients, due in turn to improved treatments. The nurses used to equate this behaviour with the diagnosis of "chronic mania" for which the present day equivalent would invariably be schizophrenia.

Rosen (1968) refers to a case described by Alexander of Tralles, the Greek physician of the sixth century A.D. The patient bound up her middle finger for fear that the world would collapse if she bent it. This was clearly an example of delusional reasoning. As already stated all our cases using only one arm chose the left. This may be of some special significance, but may, of course, simply be related to predominant right-handedness. In many cultures, such as some South American Indians and Burmese hill tribes, tight bands are worn as part of everyday adornment. It is hoped that a study of this behaviour from an anthropological viewpoint will be the subject of a later paper.

Does the present series provide any factual support for the delusional hypothesis? The seven organic cases were for the most part too demented to communicate any kind of explanation though one had at one stage exhibited prominent delusions (Case 12) and another (Case 13) certainly appeared to have delusional "health" reasons, the bands acting as some kind of talisman.

Taking the thirteen schizophrenics, a striking observation about this group was their marked reluctance to talk about or show their bands despite their ability to hold an otherwise coherent conversation on many topics. Nine gave fairly clear explanations of their behaviour: four were for "health" reasons—for example to combat "the indirect reaction (electricity) from the hospital which stops the blood flowing" (Case 16); "to heal the throat" (Case 10); "to stop the face changing colour" (Case 11); "to stop the head dropping off" (Case 4). One man (Case 18) placed strips of cloth around his leg probably to keep the "rays" out. This "protective" function was strongly suspected in four other cases and in a further three their somewhat masochistic explanations implied an underlying delusion.

Only one patient (Case 19) gave an apparently straightforward explanation which was convincing. He said he kept elastic bands on his left wrist for use in occupational therapy. They were relatively slack and he never complained of pain or acquired any lesion. Nevertheless, even this must be questioned. On virtually no occasion was he without a band despite having them removed.

One patient, not included in this series, was acutely disturbed with auditory, visual and tactile hallucinations, passivity experiences and thought disorder typical of schizophrenia. He held a purely delusional belief, without any material basis, that there were elastic bands round his fingers and that these would cause his arms to drop off if they worked their way up to his elbows. He had never applied bands to himself, and we were unable to define why he had focused his attention on this particular idea.

Conclusions

Only the most tentative conclusions can be drawn from this study. In the absence of

adequate figures for the total hospital population it can be stated only reservedly that sex, age and diagnosis of the band wearers probably follow the normal distribution in the total population, though possibly with a heavier loading of schizophrenics.

The left upper limb was the most consistent site of application of the bands, this may or may not be of significance.

Injury from the bands can be considered an accidental occurrence unrelated to underlying motivation and dependent on the site chosen and the material used. An important point is the almost complete absence of any complaint of pain or discomfort despite often quite severe injury. This needs further elucidation.

Analysis of the reasoning behind the behaviour strongly suggests delusional motivation in the schizophrenic group and at least two of the organic group. This conclusion is supported by the extreme reticence in talking about the act.

Whilst one hesitates to generalize from this psychiatric hospital sample to the general population, it is perhaps justifiable to suggest that while self-application of constricting bands is probably not pathognomonic of mental disorder it may be worthwhile referring for psychiatric investigation all individuals who "accidentally" acquire lesions in this manner.

A brief review of cultural habits in this context suggests a deep-rooted belief that encircling bands possess the magical properties of a talisman. This appears comparable to the historical attitude to tattoos. To relate this to modern Western culture a thorough survey of a normal population is needed, and this the present authors hope to undertake.

Summary

Twenty psychiatric patients with self-applied constricting bands were studied. They comprised thirteen schizophrenics and seven organic cases. The preferred site of application was the left arm, the underlying motive probably delusional, and marked reticence in talking about the behaviour was noted. A striking finding was the total absence of complaints of pain despite, at times, substantial tissue damage. The possible significance of these findings is discussed.

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