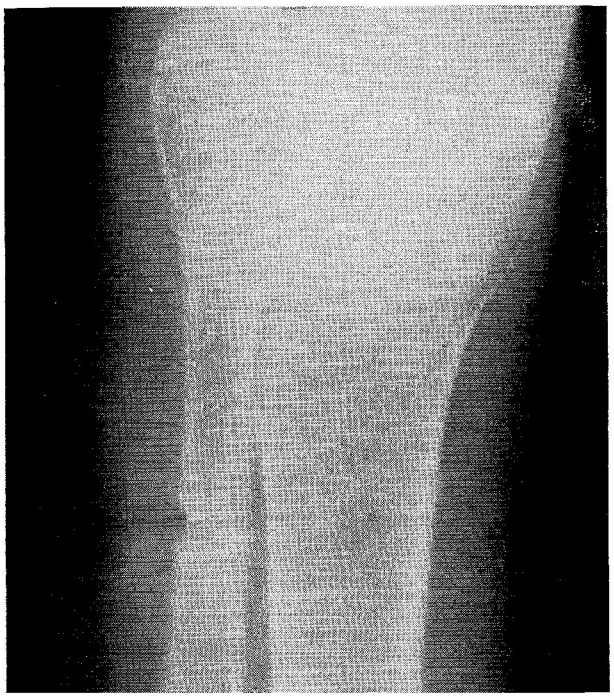

X-Ray film of left leg. Note punched-out defect of fibula with callus nearly bridging it.

Because of persistent drainage from multiple sinus tracts, operative debridement was done on April 26. In the depths of the circumferential wound was found an ordinary rubber band which had eroded through the anterior tibial tendon, three-quarters through the achilles tendon, and into the lateral aspect of the fibula. The rubber band was transected, removed, and a liberal debridement was completed. Although not apparent at surgery, it was evident by testing that superficial peroneal and sural nerves had also been compromised by the rubber band. Complete healing with aid of further skin-grafting followed, and vigorous physical therapy prevented ankylosis and contracture. The patient was finally discharged on July 3, 1963, in a low-leg spring-action brace, without evidence of significant nerve regeneration.

Comment

Discussion. With further questioning following surgery, the patient recalled that he had kept his rag dressing in place with rubber bands prior to admission. Unknown to him as well as to his physicians, the rubber band had apparently begun its inward journey at least nine weeks prior to its removal. This unlikely form of trauma is subject to direct measurement, in that the circumference of the band was 11 cm and the circumference of the ankle was approximately 21 cm. In order to stretch this elastic 10 cm, a force of 82.5 gm was required. Since the surface area of the stretched rubber band was about 4.65 sq cm, this is a force of 17.7 gm/sq cm on the tissues eroded, at least at the surface. Such are the dimensions of a trauma causing an 18-week hospitalization and considrable disability. Had the patient been unfortunate enough to pick a smaller rubber band, vascular compromise undoubtedly would have occurred. Unlike the block of ice which is transected by a weighted wire, the human extremity could hardly be expected to heal behind a slowly transecting noose, in the form of an irritating foreign body.

The patient affords follow-up observation by periodically reappearing with cellulitis and superficial ulceration in the area of injury. The callus on the fibula is gradually resolving, and the bony defect is disappearing one year following admission. There is some evidence of nerve regeneration and there is 20° motion at the ankle, with more weakness in dorsiflexion than in plantar flexion. The brace is still necessary.

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Drug Abuse and Addiction

Reporting in a General Hospital

John A. Schremly, MD, and Philip Solomon, MD, Boston

ALTHOUGH DRUG ABUSE and addiction has been a social problem since the latter 19th century, there are no reliable incidence or prevalence statistics currently available. Hambourger [1] reported on the prevalence of the abuse of barbiturates. In the decade studied (1928-1937) only 85 of 1,250,000 general hospital admissions were diagnosed as barbiturate addicts. Of the 85, only 42 "took barbiturates daily." It was puzzling to learn that over the ten years barbiturate addiction accounted for only 0.11% of more than 300,000 admissions to one of the largest hospitals surveyed, the Boston City Hospital. This was all the more remarkable since acute barbiturate poisoning represented almost 20% of the total number of all cases of poisoning (approximately 2,000, excluding alcohol and carbon monoxide) admitted to this hospital.

The present authors decided to investigate the current degree of drug abuse and addiction in the Boston City Hospital. A preliminary survey of the records of the past two-year period (1959-1961) revealed that only ten cases of drug abuse or addiction had been reported by the house officers. A systematized running study was then undertaken of the number of patients with drug abuse or addiction admitted to the Boston City Hospital. All the important drugs known to have abuse potential were included.[2] It was anticipated that a much greater number of cases would be found than the previous hospital records indicated. Although the taking of drugs when not indicated medically constitutes abuse, only those patients who abused

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drugs daily for one month or longer were considered reportable for purposes of this study. Alcohol was excluded from this study.

Procedure

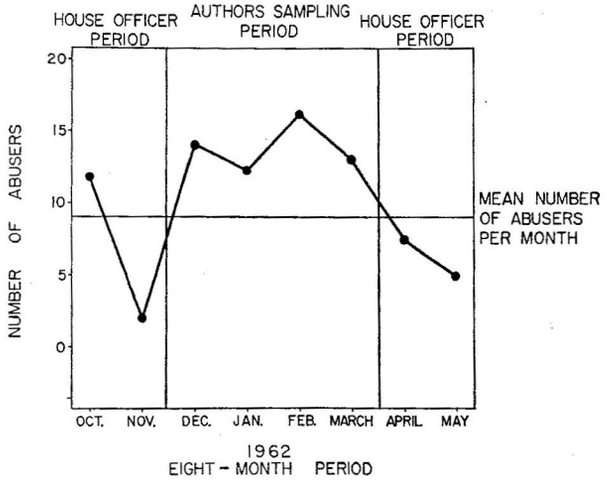
All new cases of drug abuse or addiction admitted to the Emergency Floor of the Boston City Hospital over an eight-month period (October, 1961—May, 1962) were counted. House officers were requested to diagnose and report to the authors each new case. An appropriate check sheet (available upon request) was provided for convenience in reporting. All submitted cases were relatively easy to validate since the data requested was minimal and the criteria readily available. One of the authors saw the majority of patients and upon documentation the sum of $1 was paid to the reporting house officer. All patients age 15 and over admitted to the Emergency Floor were thus screened on a 24-hour round-the-clock basis during the eight-month period.

A technique of random sampling was also employed in the hopes of uncovering otherwise missed or "hidden" abusers. The middle four months (December, 1961—March, 1962) were more closely screened by the authors beyond the ordinary routine afforded by the usual house officer coverage on the Emergency Floor. At weekly intervals, every 20th patient of any sort was interviewed, varying the day at random, with the purpose of eliciting the diagnosis of drug abuse or addiction. The average number seen during a 24-hour period was 15. Elopements, those who departed before they could be seen, varied from one to two in any given sampling. Children under 15 years of age, maternity patients (who enter via a special route bypassing the Emergency Floor), and persons dead on arrival were omitted from the count in establishing every 20th patient for interviewing. The next in succession (21st) was counted when any reason disqualified a patient in the regular order of rotation. The average number missed per 24-hour sampling was one.

Approximately 100,000 patients were admitted to the Emergency Floor over the eight months studied; primarily they were in the lower socio-economic group, ranged in age from infancy to senescence, were mainly Roman Catholic, and were equally divided between Caucasian (largely Irish and Italian) and Negro. Approximately 400 were admitted daily.

Results

A total of 82 drug abusers and addicts was reported during the eight-month study (Figure). Forty-four were addicted as follows: diacetylmorphine (heroin), 32 (four of these also abused barbiturates); terpin hydrate with codeine, 5; paregoric, 3; morphine sulfate, 2; dihydrohydroxycodeinone (Percodan), 1; codeine, 1. Thirty-eight were abusers as follows: barbiturates, 17 (one of these also abused meperidine hydrochloride (Demerol Hydrochloride); meprobamate, 5; dextroamphetamine sulfate, 4; both barbiturates and dextroamphetamine sulfate, 3; glutethimide (Doriden), 2; bromides, 2; an inhaler (Valo) containing 150 mg of 2-amino heptane carbonate, 150 mg of d-l desoxyephedine carbonate, 50 mg of phenylpropanolamine carbonate, menthol and aromatics, 2; and chlordiazepoxide hydrochloride (Librium), ethchlorvynol (Placidyl), and propoxyphene hydrochloride (Darvon), 1 each. Among the heroin addicts, two also abused marijuana, one, lysergide (LSD-25), and one, propoxyphene hydrochloride. By comparison,



Comparison of number of abusers uncovered during control and sampling period.

the authors in their routine hospital work diagnosed only two cases in the total of 28 reported during the two separate periods when the house officers did all the routine checking.

A check of both the Boston City Hospital and the Commonwealth of Massachusetts Food and Drug Division records indicated that only six new cases were officially reported to either of these agencies during the eight-month period. The authors had offered psychiatric consultation, but had made no attempt to alter current procedures of reporting for medical or legal reasons.

Comment

There was great discrepancy between the number of drug abusers and addicts actually discovered in the eight months of routine checking on the new admissions to the hospital and the number reported to the official agencies of the state during that same period. The six patients reported constituted only 7% of the total 82 patients who should have been reported. The six in eight months compare statistically with the ten in the two years 1959-1961, mentioned previously. Obviously, the officially reported figures fail, by an order of magnitude, to portray the facts.

Careful search also disclosed "hidden" cases of drug abuse and addiction among patients who did not readily divulge their history of drug activity. In a four-month period the authors detected 13 cases in addition to the 41 that were diagnosed by the house officers during the same period. Yet these 13 represented random sampling of only every 20th patient. If the same ratio held and all patients admitted had been seen by us, presumably some 260 hidden cases might have been discovered! The implication is that there may be far more drug abusers and addicts in the general population than has ever been suspected (apparently 3 per 1,000).

It would be interesting and important to inquire

why house officers do not report cases of drug abuse and addiction in the officially designated manner. We purposely avoided showing an interest in this question in order not to influence the behavior of the house officers. It is our strong impression from talking to house officers subsequently that few of them know that they are supposed to make such official reports. Some do know but feel that apparently no one checks up on them on these matters and conclude that presumably the whole thing is of little concern. In the busy life of a house officer what can be neglected often is neglected.

It would be interesting to know whether these same attitudes and practices exist also among practicing physicians in the community. They may be even more motivated to avoid filling out the proper forms by virtue of a desire to "protect" their private patients from the stigma of public reporting. The increased results of the house officers during the period when the authors were present doing the random sampling may well have been due to increased awareness of the problem of drug abuse and addiction because of our presence. That increased interest and attention to the problem can elicit many more hidden cases is suggested by the fact that the authors, admittedly more experienced interviewers, by sampling only every 20th new admission were able to detect 32% more cases beyond those detected by the house officers (13 cases beyond the 41). It must be recognized, however, that the four months in which the random sampling took place were the winter months when admissions generally were greater in number.

Summary

House officers on duty at the Emergency Floor of the Boston City Hospital were motivated by the offer of a monetary reward to report instances of drug abuse and addiction in new patients being admitted to the hospital. After a period of two months, random sampling of all new admissions was made by the authors for a period of four months to see if more experienced interviewing would detect "hidden" cases of drug addiction and abuse missed by the house officers. Following these four months, there was a return to two more months of motivated reporting by the house officers alone. The official records of the Commonwealth of Massachusetts were then examined to see how many of the detected cases were reported by the house officers in routine fashion.

Of 82 cases detected, only six were reported. In the four months in which the house officers worked alone they detected 28 cases. In the four months the authors worked alongside them, the house officers detected 41 cases and the authors, by sampling every 20th new admission, detected 13 more.

It is concluded: (1) Because of failure to report diagnosed cases, official statistical figures may underestimate by an order of magnitude the true amount of drug abuse and addiction in the community; (2) Increased interest and attention to the problem of drug abuse and addiction in new patients being admitted to a large general hospital may elicit many hidden cases otherwise undetected. The failure of proper interest and attention may account for another order of magnitude in the underestimation of drug abuse and addiction in the community.

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Generic and Trade Names of Drugs

Meprobamate—*Equanil, Equanil L-A, Wyseals, Meprospan, Meprotabs, Miltown.*

Glutethimide—*Doriden.*

Chlordiazepoxide hydrochloride—*Librium.*

Ethchlorvynol—*Placidyl.*

Propoxyphene hydrochloride—*Darvon.*

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Role of the Teaching Hospital in the Goal of the Community

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THE SOLE JUSTIFICATION for the existence of the hospital in the community is to provide an idealized medical care facility for members of that community, while the only justification for the existence of a graduate teaching program in a hospital is to provide an educational experience for the students enrolled in the program. While many would protest that the co-existence of these premises is incompatible with the objective of each, it is not only possible to reconcile these goals with each other, but to indicate that the ultimate fulfillment of one is dependent upon the existence of the other, giving significance to the term "teaching hospital." In fact, what is it we aim to teach if not idealized medical care?

A definition of good or idealized patient care is required, but attempts at definition are frequently hampered by provincial, prejudicial, and limited connotation. Furthermore, definition is difficult since we have few objective standards and criteria for judgment and even fewer tools for measurement. Nor can we agree upon the judges. However,

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