OUTCOMES OF PATIENTS WHO COMMIT SUICIDE BY BURNING

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SUMMARY. Cases in which people use fire when attempting or committing suicide are not common but nevertheless constitute a cause of admission to burns units worldwide. Usually these people are suffering from stress and have been diagnosed as mentally ill. Schizophrenia, depression, and personality disorders are the most frequently diagnosed conditions. The psychological problems appear to have been overlooked by the family or not to have been presented to them. The aim of this study is to present the clinical features, characteristics, and outcomes of patients burned during a suicide attempt. The role of the psychiatrist is important, starting in the emergency room. The incidence of patients committing self-injury by burning appears to be higher in women burn patients. Deceased patients usually have a larger extent of burns and a higher incidence of other injuries and require more surgical procedures and longer hospitalization times. The problems for burn unit staff and qualified psychiatric care are discussed.

Keywords: self-immolation, burns, attempted suicide by burning

Introduction

Attempted suicide by burning (“self-immolation”) is uncommon in Western countries, accounting for 2-6% of burn centre admissions. Nevertheless, this particular patient group remains a great challenge for the burn team because of its special characteristics, placing a heavy burden on medical, nursing, and financial resources.

In 2008, according to WHO, Eurostat, and Elstat (Greek Statistics Service), the annual suicide rate in the 27 EU member states was 10.1 suicides per 100,000 population, the highest being in Lithuania (30.7 per 100,000 and the lowest in Greece (2.8 per 100,000).

In Greece there were 4042 documented suicides in the period 1999-2009, at a steady rate. Since then there has been an increase: from 507 cases in 2009 to 622 in 2010 and 798 in 2012. Psychiatrists correlate this phenomenon with the higher unemployment in the last years.

Given this increase in suicide rates in Greece we took the opportunity to review the particular subset of patients who attempted suicide by burning presenting to our Burns Unit in Evaggelismos Hospital.

A retrospective review was performed, examining emergency admissions to our Burns Unit over the past six years. We included burn patients with documented self-inflicted injuries, excluding cases in which deliberate self-harm might have been suspected but not admitted. We recorded patient demographics, marital status, previous psychiatric history, and total body surface area (TBSA) burned.

Results

The review of our records for the past six years showed that nine patients who attempted suicide by self-immolation were admitted to our burns unit (Figs. 1-3) (Table I), representing 4% of all burn admissions. This incidence does not reflect the true incidence of suicide by immolation since some patients may have died immediately and were never transferred to our burns unit.

Five of the patients were female (55%) (mean age all patients, 58 yr; age range, 39-82 yr). Four patients (45%) were single/divorced at the time of their injury, five were unemployed (55%), and two (22%) were in prison.

Nearly all the patients were reported to have had a low income status (unemployed, supported by family, low pension). A psychiatric history was recorded in five cases (55%), depression being the most common diagnosis, followed by bipolar disorder and alcohol abuse. The average TBSA was 40.4% (range, 5-91%). Three of our patients sustained inhalation injury for which they were in-
tubated, only to succumb to their injuries in the first five days of hospitalization (mortality, 33%). Eight were injured when they set fire to their clothing - in three cases they set fire to the bed linen as well; four patients used a liquid accelerant on their clothes (gasoline, domestic use alcohol) and swallowed acid solution resulting in a chemical burn. The surviving patients were taken to the operating theatre under general anaesthesia at least twice dur-

**Table I** - Demographic data of our patients

<table>
<thead>
<tr>
<th>Patient number</th>
<th>Sex</th>
<th>Age (yr)</th>
<th>Marital status</th>
<th>Psychiatric history</th>
<th>Financial situation</th>
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<td></td>
<td></td>
<td>Married</td>
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<td>Good</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Unmarried</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Divorced</td>
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<td></td>
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<tr>
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<td>+</td>
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<td>F</td>
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</tr>
</tbody>
</table>

**Fig. 1** - Injury pattern of patient who attempted suicide by burning.

**Fig. 2** - A second patient.

**Fig. 3** - A third patient.
In their hospital stay. Nearly all returned for more surgery after their discharge. All of the surviving patients received immediate counselling from our hospital’s psychiatric team; two were transferred to the psychiatric ward before their discharge from hospital.

Discussion

Characteristics of self-immolation suicide patients

The special characteristics of self-immolation victims have been reviewed and described in the literature, and a distinct difference has been discerned to this regard between Western societies and those in the East. For our review we will focus on the characteristics of Western societies: despite the low incidence of suicide attempts by self-immolation, these are associated with a much higher mortality, mean TBSA burned, frequency of complications (including inhalation injury), and prolonged hospital stay.

Most of the patients had sought psychiatric consultation prior to the event, and 43-90% were diagnosed as suffering from a psychiatric condition (including, in decreasing order, depression, schizophrenia, personality disorders, and substance abuse). The treatment of this group of patients was characterized by delayed healing, increased need for surgery, and poor cooperation. Various studies found a male preponderance, mostly in the fourth decade of life. The most common method documented is the use of a liquid accelerant to enhance the effect of setting one’s clothing on fire. The mechanism of the action together with the absence of the will to rescue oneself from the flames leads in most cases to involvement of the face, trunk, and upper extremities as also to frequent inhalation injury. Many studies also report a correlation with a low education or socio-economic status. Additional factors are loneliness, life-altering events and social stresses, the presence of chronic illness, and long-term disability.

Self-immolation victims in Greece

A previous retrospective study performed (1996-2003) at the Gennimatas General State Hospital in Athens, Greece, reported an incidence of 3.7% (53 patients), with a mean age of 53 years, 43% males, and mean burn TBSA 41.6%. A psychiatric history was noted in 43% of the patients (mostly depression). The use of flammable liquid was the most common method (70%), and the mortality rate was high (75%). The mean hospitalization time for survivors was 59 days.

Our patients generally followed the characteristics mentioned above, the majority having a psychiatric history, low socio-economic status, high TBSA percentage, high incidence of inhalation injury, prolonged hospital stay, increased need of surgery, and high mortality rate. Our group of patients showed a slight female preponderance (55%), compared to most of the series reported (yet in accordance with the other retrospective study from Athens), and a slightly higher mean age (58 yr).

Conclusion

Suicide by self-immolation represents only a small percentage of burn admissions; however, this patient group is a great burden for the specialist team because of its unique characteristics.

The nine burn patients treated in our department over the past six years generally followed the trend of self-immolation victims in Western societies; however, the sample was too small to allow any conclusions to be drawn.

We believe that this percentage underestimates the true rate of self-inflicted burns because of the frequently observed reluctance of patients and families to admit to self-harm. Insufficient record keeping and the lack of an organized national burns database also make the evaluation of burn patients (and self-inflicted burns) difficult.

Undoubtedly this subgroup of patients deserves special attention from the burn team because of their poor prognosis, and the importance of close cooperation with the psychiatric specialist cannot be overemphasized.

RÉSUMÉ. Les cas de suicide, ou de suicide manqué, par feu sont rares. Néanmoins, dans le monde entier, ce type de brûlure constitue une cause fréquente de l’hospitalisation dans les unités des brûlures. Habituellement, ces personnes souffrent de stress et ont été diagnostiquées comme souffrant de troubles mentaux. La schizophrénie, la dépression et les troubles de la personnalité sont les conditions les plus fréquemment diagnostiquées. Les problèmes psychologiques semblent avoir été négligés par la famille du patient ou ne pas avoir été présentés. Le but de cette étude est de présenter les caractéristiques cliniques et les résultats des patients brûlés lors d’une tentative de suicide. Le rôle du psychiatre est important, à partir de la salle d’urgence. L’incidence des cas de patients qui présentent des lésions par feu paraît être plus élevée chez les femmes. Les patients avec tendances suicidées présentent généralement une extension de brûlures plus large et une incidence plus élevée d’autres lésions et des temps d’hospitalisation plus longs. Les problèmes pour le personnel des services des grands brûlés et les soins psychiatriques qualifiés nécessaires sont discutés.

Mots-clés: auto-immolation, brûlures, tentatives de suicide par feu
BIBLIOGRAPHY


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