Burns and Cancer

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Risks for Skin and Other Cancers Up to 25 Years after Burn Injuries

A series of case reports of cancers situated in scar tissue has raised concerns that thermal or chemical burns can cause skin cancer. Frequently, changes in medical understanding of disease are preceded by such case reports and the beliefs held by experienced practitioners. The next step in the knowledge process is to test the hypothesis by means of an epidemiological study. The first epidemiological study of burns and cancer outcomes is reported here.

16,903 Danish hospitalised burn patients (1978 through 1993) were included in the cohort and cancer outcomes were observed until the end of 2002. Degree of burn and any skin graft treatment was recorded and used in the analysis. The rest of the Danish population was used as the reference group.

42% of thermal or chemical burn victims were under 20 years of age. 22% of patients received skin grafts. The mean follow-up time was 15.6 years.

The rate of skin cancer in burn victims was significantly reduced by 30%.

There were no significant increases in any form of cancer studied except the lung and larynx; relative incidence rates 1.2 (1.0 to 1.4) and 1.7 (1.0 to 2.7) respectively. These increases were not associated with a history of burns specific to these tissues.

Skin cancer rates did not significantly vary with type of cancer, co location of burn and cancer, time since scarring, severity of burn or, transplant status.

Comment
Reduced rates of melanoma in skin burn victims could be explained by reduced exposure to sunlight. Physicians will often advise against excessive exposure; scar tissue may be more likely to change pigmentation and is often uncomfortable when exposed. However, another study of burns victims has shown no reduction in exposure to sunlight.

There could still be a causal link between burns and co-localised cancer. If so, it is not probable enough to have emerged in this powerful statistical analysis. It may be that in individual cases some histological link could be found that would suggest causation. Remote sites of cancer could also be linked in fact but evidence for this would be exceptionally difficult to establish.

Strengths of the study:
A large cohort with a significant follow-up period. Objective records of burns and cancer outcomes. Objective selection criteria.

Weaknesses:
The follow-up period may have been too short [max = 25 years] for formulating a definitive interpretation; some cancers appear more than 30 years after initiation. Some experts believe that latency is longer for younger burns victims.

Conclusion:
The study suggests that there is no reasonable prospect of cancer caused by burns, whether thermal or chemical. If the finding is accepted as being generalisable, fear of dread disease should not feature in burns claims.

A reanalysis of this cohort in ten years time should be undertaken.