

Characteristics, Risk Factors, and Outcomes of Grass Cutting Device-related Eye Injury in Northern Thailand

Nathaya Panyowatkul*, MD, Voraporn Chaikitmongkol, MD, Nimitr Ittipunkul, MD
*Department of Ophthalmology,
Faculty of Medicine, Chiang Mai University*

Purpose: To determine characteristics, risk factors, and outcomes of eye injuries due to grass cutting devices in Northern Thailand.

Design: Retrospective cohort study

Methods: Medical charts of patients who were hospitalized in Chiang Mai University Hospital due to grass cutting device-related eye injury from January 2007 to December 2011 (5 years) were reviewed.

Results: A total of 141 eyes (141 patients) were identified of which 94% were men. Mean age was 48 ± 1 years (range, 8-75). Devices causing the injury were grass trimmer (99%, 140 eyes) and lawn mower (1%, 1 eye). Bystanders accounted for 4% of the injuries. Ninety eight percent of the patients had no eye protection. Half of the injuries (55%, 77 eyes) occurred during the rainy season. Median presenting vision was hand motion (HM) (IQR, finger count to light perception). Seventy five percent (105 eyes) had open-globe injury. Fifty percent (70 eyes) had retinal detachment. Forty three percent (60 eyes) had intraocular foreign body, among these, 88% (53 eyes) involved metallic objects. Twenty eight percent (39 eyes) had endophthalmitis. Surgical managements were required in 66% (93 eyes). Seven percent (10 eyes) underwent enucleations. Mean follow-up duration was 6.7 ± 0.9 months. Median final vision was 6/60 (IQR, 6/9 to HM); no PL was measured in 18 eyes. Factors associated with poor visual outcome were RAPD (OR 40.1, 95%CI 15.0 to 107.4, $P=0.000$), retinal detachment (OR 7.1, 95%CI 2.7 to 18.8, $p=0.000$), and endophthalmitis (OR 3.4, 95%CI 1.5 to 7.3, $P=0.003$).

Conclusions: Grass trimmer is associated with severe eye injury and blindness. Users of this device should be encouraged to wear eye protection and to switch from metal blade to nylon string trimmers.