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Introduction

- Breast implants are susceptible to trauma but understudied in trauma epidemiology, with most literature focused on spontaneous rupture
- Mechanisms of injury (MOIs) and resulting implant complications remain poorly defined.

Objective: Characterize the MOIs and clinical presentations associated with post-traumatic breast implant and tissue-expander injuries

Methods

Dataset: Nationwide Readmissions Database (NRD), from 2017-2020.

Patient Population:

- Patients admitted with a trauma admission preceding or accompanying breast implant complications (rupture, displacement) or related surgical procedures
- Identified using ICD-10 and CPT codes

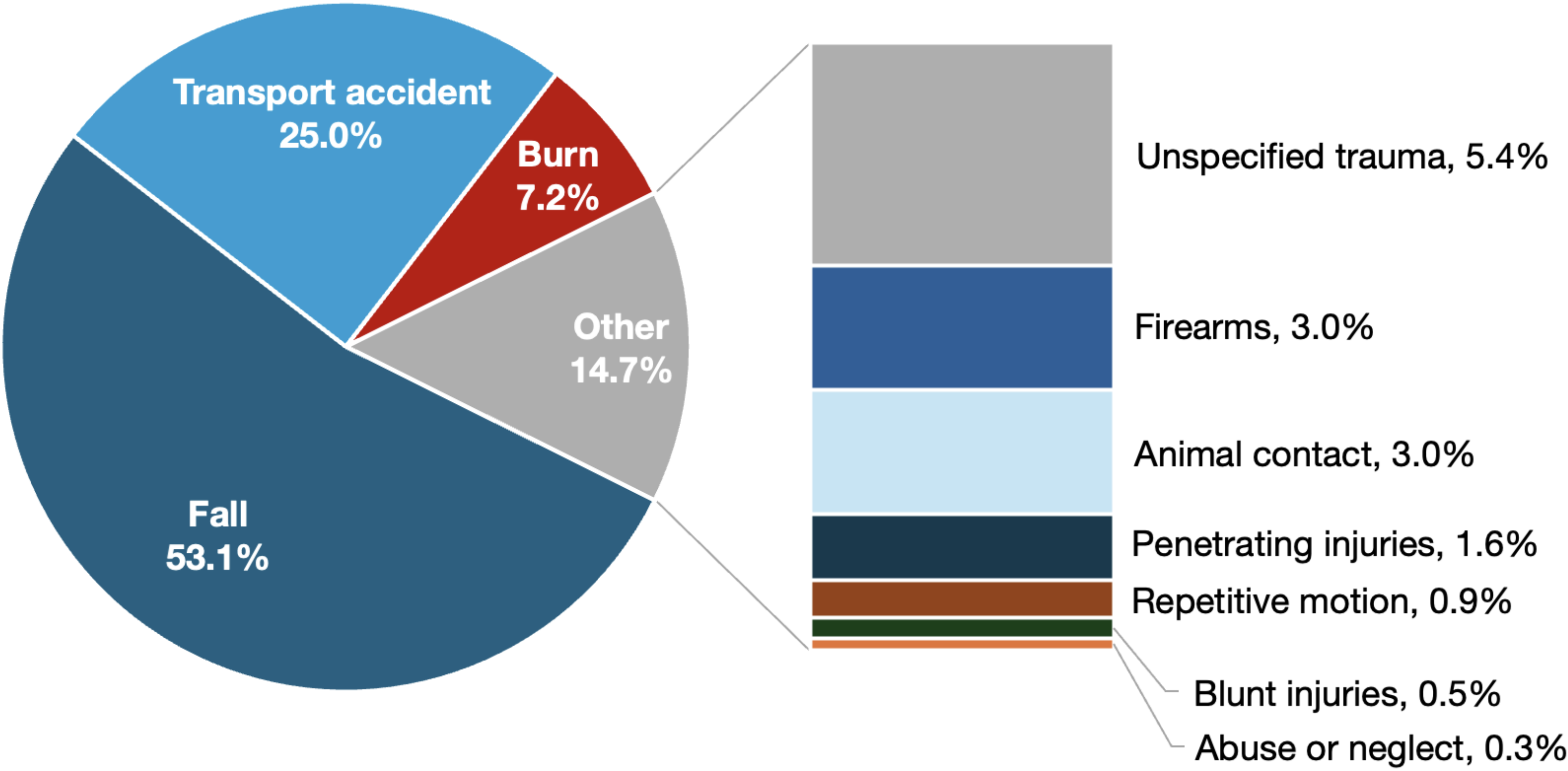
Outcomes:

- MOIs categorized: falls, transport accidents, burns, animal-related, firearm injuries, others
- Clinical presentations categorized based on rib/clavicle fractures, hemothorax/pneumothorax, breast symptoms, thoracic wounds.
- Timing of diagnosis and management

Results

Mechanisms of Injury

- N = **573 patients** (488 with breast implants, 85 with tissue expanders)
- Mean age 61 years; 99.3% female
- Most common MOIs were falls (53.2%), transport accidents (25%), and burns (7.2%)
- Less common were animals contact (3.0%) firearm injuries (3.0%), and repetitive motion injuries (0.9%)
- Tissue expanders were disproportionately associated with burn injuries (20.5%) compared to non-TE implants (4.9%).



Clinical Presentation at Index Admission

- Rib or clavicle fractures (21.1%)
- Non-fracture thoracic injuries (12.9%)
- Breast pain or deformity (12.6%)
- Hemothorax or pneumothorax (10.1%)

Diagnosis and Management

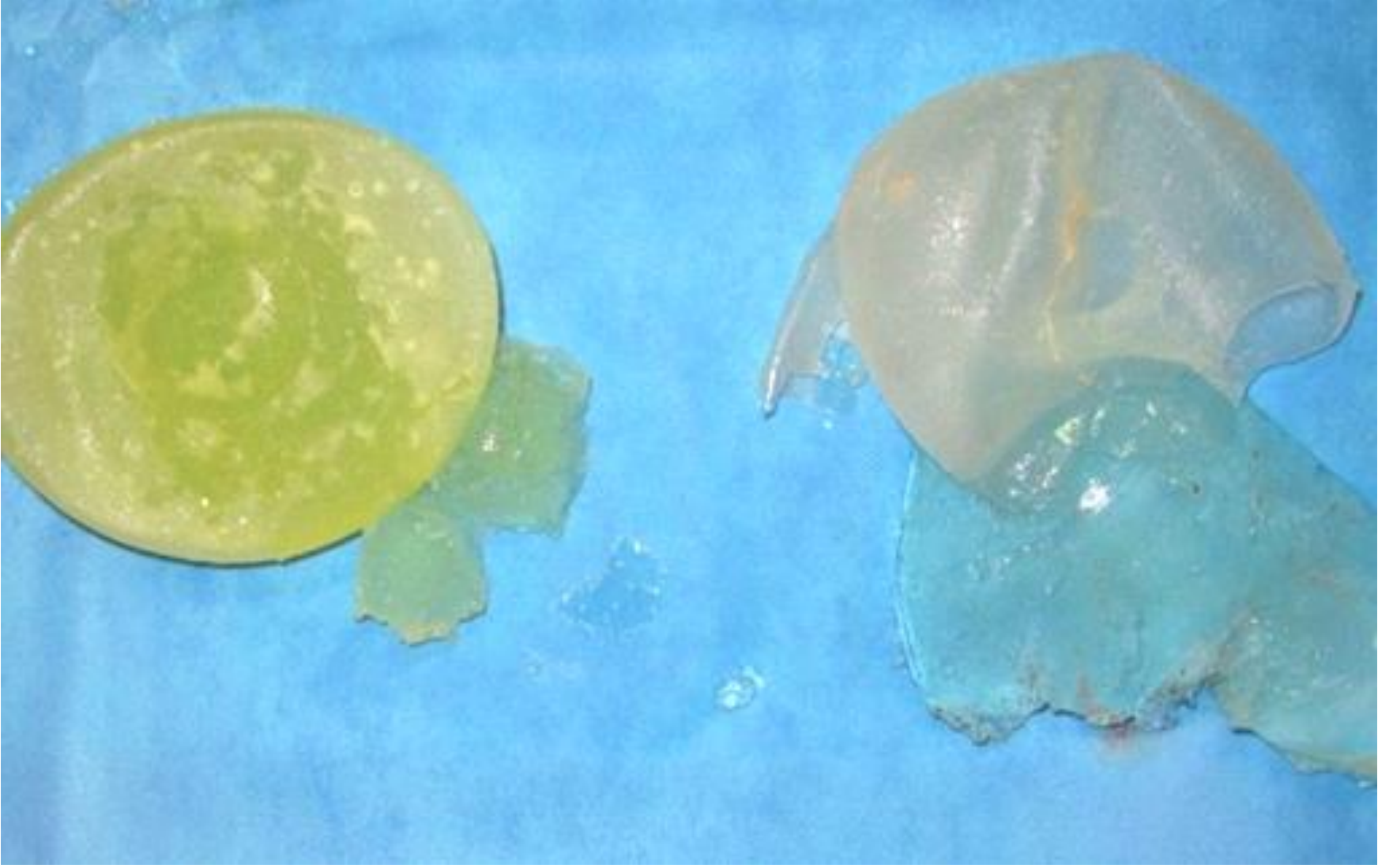
- Implant rupture diagnosed in 57.8% of patients
- Implant-related procedure in 55.3% of patients (95% were explantations)

Conclusions

- Trauma-related breast implant complications arise from diverse injury mechanisms—**falls are most common**.
- Over half of patients with traumatic breast implant complications undergo explantation within the year
- Most patients **lack immediate breast symptoms**
 - Providers should maintain a high index of suspicion for implant rupture even in the absence of breast pain or deformation
- Patients with tissue expanders are particularly vulnerable to burn injuries** and warrant proactive evaluation and counseling.
 - Likely due to reduced skin sensation and thinner tissue after expansion, leading to impaired heat dispersion

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