Devastating Dismounted IED Injuries in OEF

Increasing Amputation and Genital Injury Rates admitted to LRMC

2009-2010

(Sept - Dec 2010)
• My personal observations (Dec 11-26, 2010)
  – Cared for combat casualties from 1989-2008

• 2 week volunteer as a member of the ACS-COT, AAST and JTTS Senior Visiting Surgeons Program

• Describe rates of devastating injuries like I have never seen before
Typical High Bilateral Amputations, Scrotal and Abdominal Wounds
Amputations in U.S. Military Personnel in the Current Conflicts in Afghanistan and Iraq

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• From 2001-2006, 8058 military casualties entered into the JTTR,
  – 5684 (70.5%) were recorded as having major limb injuries.
• Of these, 423 (7.4%) underwent major limb amputation
• The mechanism of injury for 87.9% was some form of explosive device.
• The major amputation rate during Vietnam was 8.3% of major limb injuries.
• Overall, major limb amputation rates for the current U.S. engagement in Afghanistan and Iraq (2001-2006) are similar to those of previous conflicts.
Number of US Wounded admitted to LRMC
Jan 2009 – Dec 2010

- Total US Wounded: 186
- Total Wounded Soldiers: 180
- Total Wounded Marines: 168

Line chart showing the number of US wounded admitted to LRMC from Jan 2009 to Dec 2010, with different lines for different categories.
Soldier/Marine Amputation Rates
Jan 2009 – Dec 2010

Wounded Soldiers with Amputations:
- 40% Amputations
- 30%

Wounded Marines with Amputations:
- 35%
- 30%

6% baseline amputation rate over the last 7 years

Marines - 200% increase over 10 months
Single and Multiple Limb Amputations
Sep 2010 – Dec 2010

- One Amputation: 90%
- Two Amputations: 80%
- Three or Four Amputations: 75%

200% increase in double amputation rate
Injury to the genitalia has historically occurred in 0.5–4.2% of all war injuries.

- Injuries to the external genitalia are typically not life threatening.
- Injuries to the external genitalia can result in substantial long-term urinary, hormonal and sexual dysfunction and concomitant severe psychosocial distress to the casualties.

A retrospective review of the patients who sustained genitalia injuries at an US Army CSH in Iraq over 6 months in 2007 was performed.

Of the 3595 battle trauma injuries seen at the CSH during the time period, 168 (4.7%) had one or more GU injuries, consistent with previously reported rates.

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Percent of LRMC Trauma Admissions with GU Injuries 2009-2010

4% over first 17 months
11% over last 7 months
- a 175% increase
Amputation and Genitalia Summary

• Amputation rates for evacuated Marines has increased from 6 to 18% over the last 10 months
  – a 200% increase over baseline
  – The double amputation rate increased from 19 to 75% over 4 months, a 295% increase
  – The amputation rate in December 2010 was 38% of all admissions
  – Most of the amputations are high proximal injuries, extremely disabling.

• Genitalia injury rates increased from 4% to 11% over last 7 months, a 175% increase
  – Extremely disabling

• Emotional impact on casualties, families and medical providers is enormous
Medical Response

• Army TSG has established a rapid response taskforce
• Tactical Combat Casualty Care is aware
  – Interventions
    • truncal /groin hemorrhage control
    • Improved fluid resuscitation (prehospital lyophallized plasma)
    • CASEVAC issues (plasma and RBCs)

• Joint Theater Trauma System
  – Interventions
    • GU capability forward
    • Guideline for changing surgical management
    • New simulation situations
    • Conference on management
    • Compassion fatigue / PTSD in providers
    • Track rates via JTTR

• Line leadership is aware