Post-Operative Wound Infection in Growing Rod Surgery for Early-Onset Scoliosis

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SAN DIEGO CENTER FOR SPINAL DISORDERS

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Disclosures

Author	Disclosure
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a. **Grants/Research Support**
b. **Consultant**
c. **Stock/Shareholder**
d. **Speakers' Bureau**
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Introduction

- The risk of Post Operative Wound Infection (POWI) after growing rod (GR) surgery for early onset scoliosis (EOS) is **real** due to presence of co-morbidities and repeated surgeries

- The characteristics and management of POWI after GR surgery has not been clearly characterized yet.

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Introduction

Complications of Growing-Rod Treatment for Early-Onset Scoliosis

Analysis of One Hundred and Forty Patients

JBJS, 2010

- Out of a total of 177 complications, there were 21 post operative wound infections in 20 (14.3%) patients.
- Six superficial wound infections, all in dual GR and 15 deep wound infections, 9 in dual rod GR

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Methods

- Multi-center, retrospective, IRB approved review of clinical and radiographic data of 329 patients from 9 sites

- Inclusion criteria included:

  1- EOS patients with any etiology

  2- Growing Rod treatment

  3- At least one post operative wound infection (superficial, deep)

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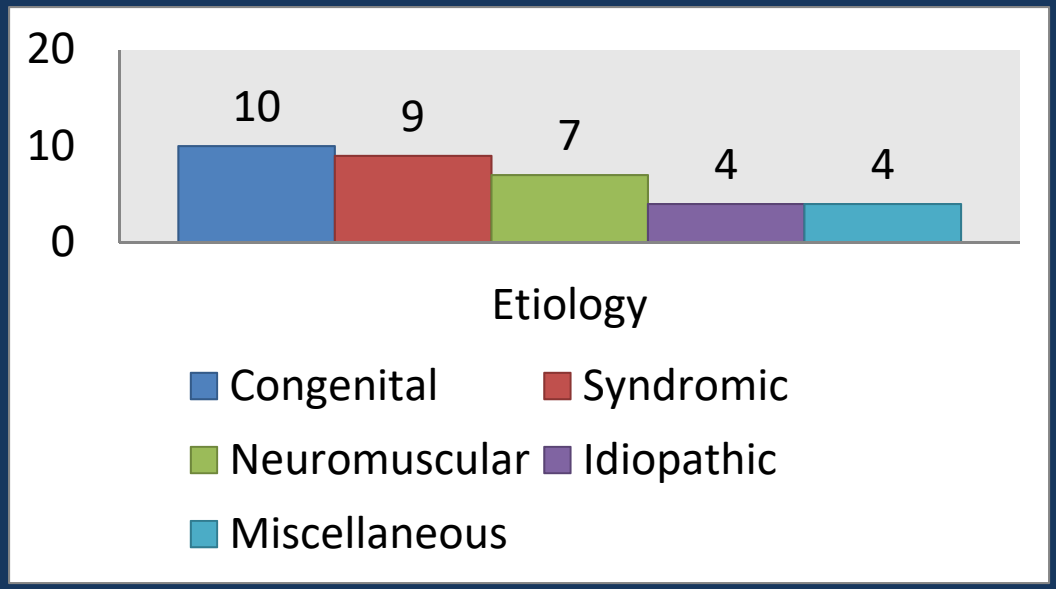
Results

- Thirty-four patients (10.3%) had a total of 58 infection events including 34 primary infections (24 deep, 10 superficial) and 24 recurring infection events.



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Results

- The mean age at index surgery was 5.2 yrs and at 1st infection was 7.9 yrs
- Patients had a mean of 7.6 lengthenings (throughout the FU)

- At the time of infection, 11 patients had Titanium and 23 had stainless steel rods.
- Mean F/U was 31 m (10 m-123 m)

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Results

- From 58 infection events, the most common presenting symptom was fever (26, 45%) followed by unexplained pain at the site of surgery or on the implant (21%)

- The most common sign of infection was skin problem over the incision (23, 40%) followed by wound drainage (11, 19%) and skin problem over the implants (9, 16%)

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Results

- In 4 patients, rod had been exposed at the time of diagnosis of infection
- Four patients had radiographic signs of implant failure at the time of infection: 2 anchor loosening and 2 rod breakage
- Of those available lab data, ESR was > 20 mm in 82% and CRP was > 6 mg/L in 60% of first infections

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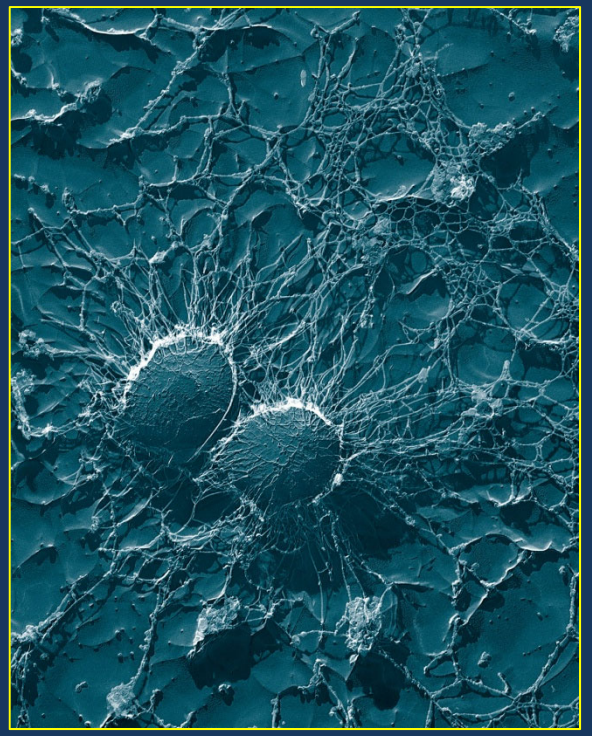
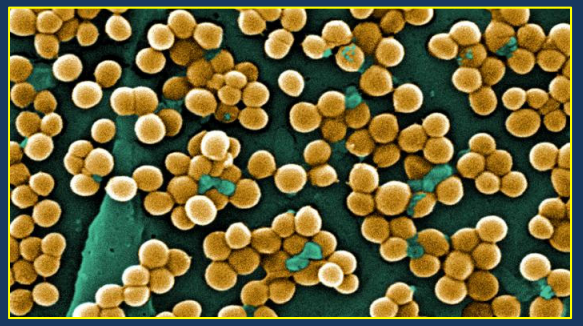
Results

- Staphylococcus Aureus (SA) was the main organism isolated from wounds in both primary (22/34) and recurring infections (14/25).

- 14% (3) of primary SA infection (22) and 29% (4) of SA recurrences (14), were MRSA





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Results

- Interval: Index GR to 1st infection= 37 m (20 d to 96 m)

- The most common perioperative antibiotics used was Cefazolin followed by Vancomycin.

- The mean length of antibiotic therapy was 22 days (IV) and 94 days (PO) following the primary infection

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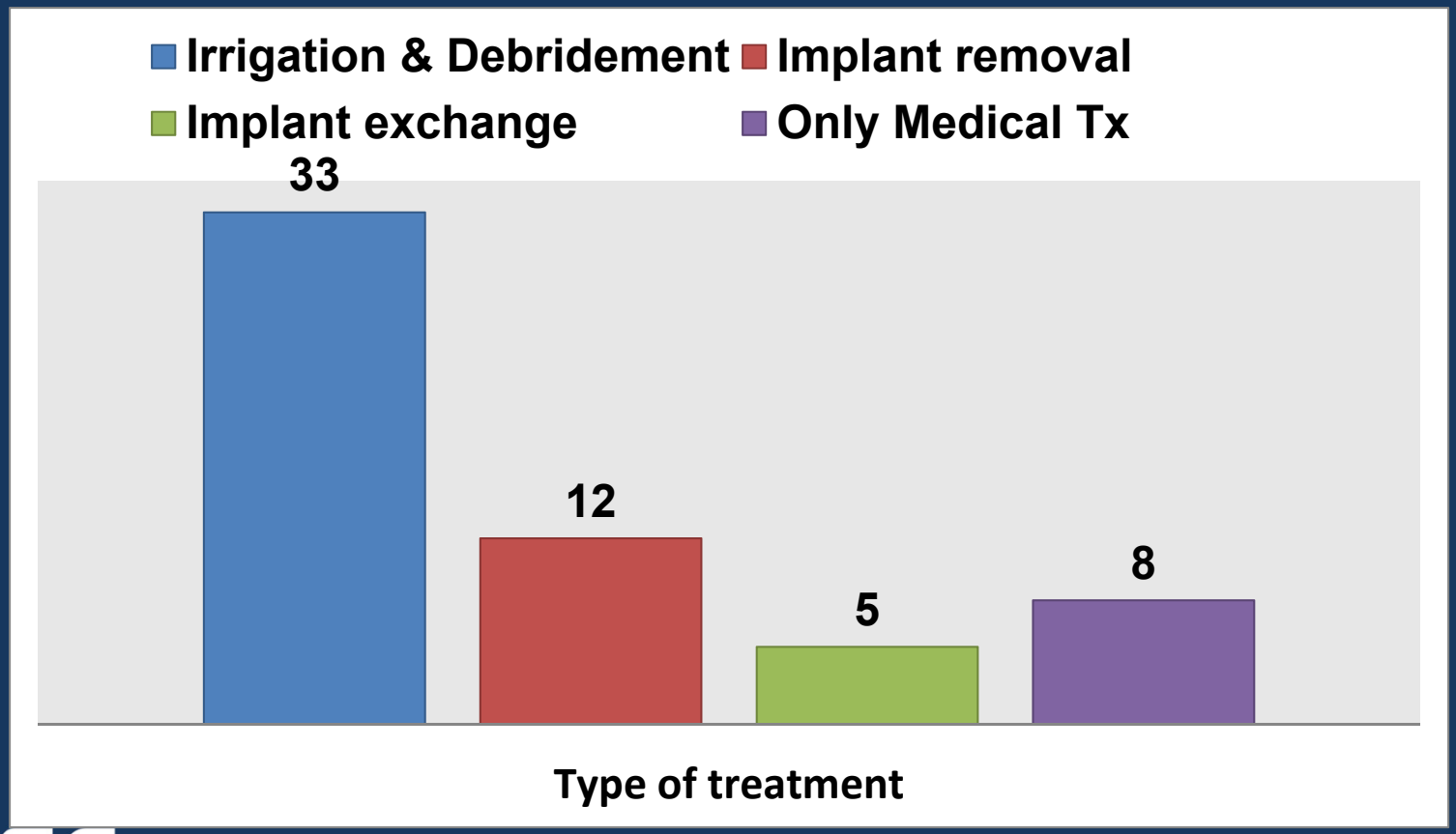
Results

- Of 58 infection events, 8 (14%) were treated medically and 50 (86%) surgically



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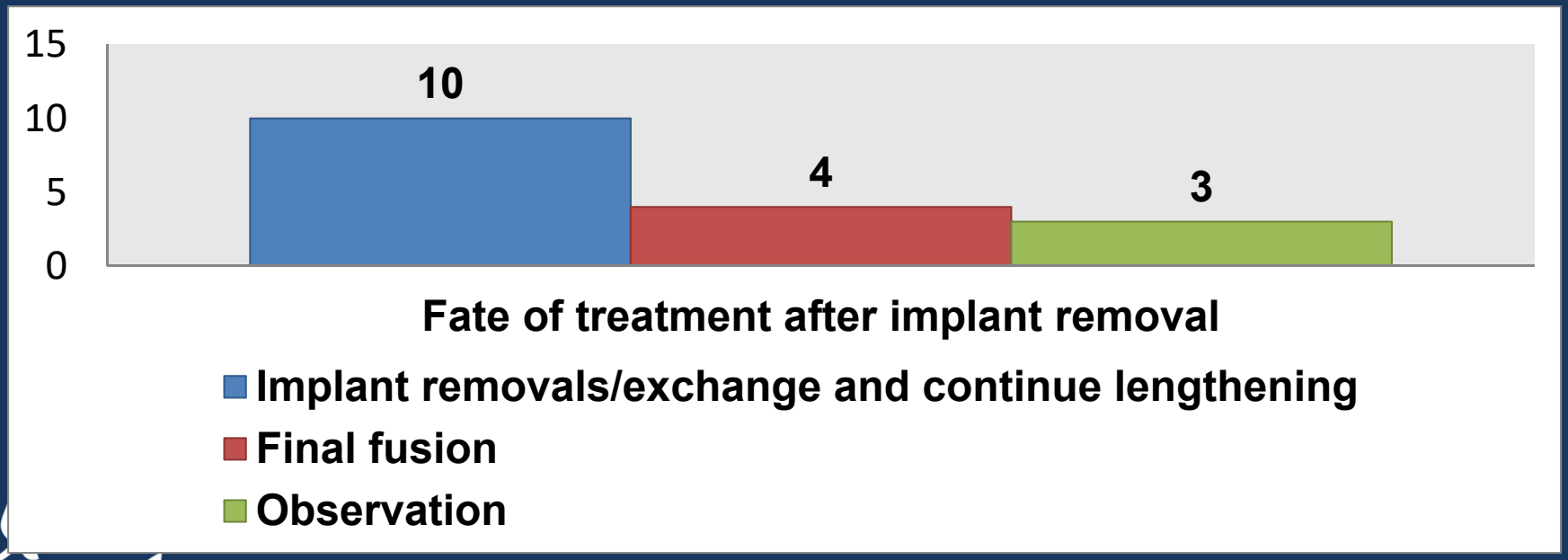
Results

- Of 17 implant removals/exchanges, 10 (60%) had immediate or delayed replacement, 4 (24%) underwent final fusion and 3 (17%) were observed with no re-instrumentation.



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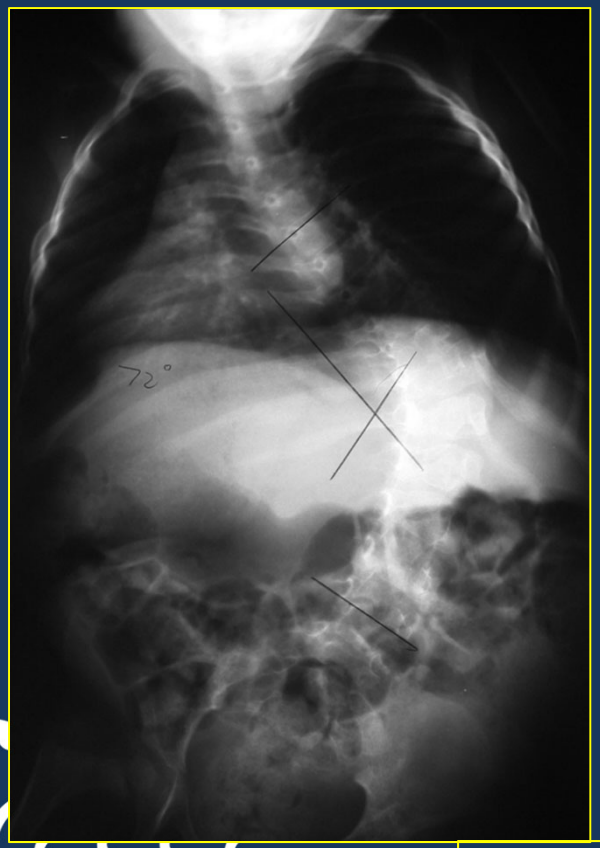
Four y/o Boy with Arthrogryposis

Sequence of events	Index surgery	First infection	Second infection	Third infection	Fourth infection
Course of Tx	GR surgery	I&D	Partial removal of implant	I&D	I&D



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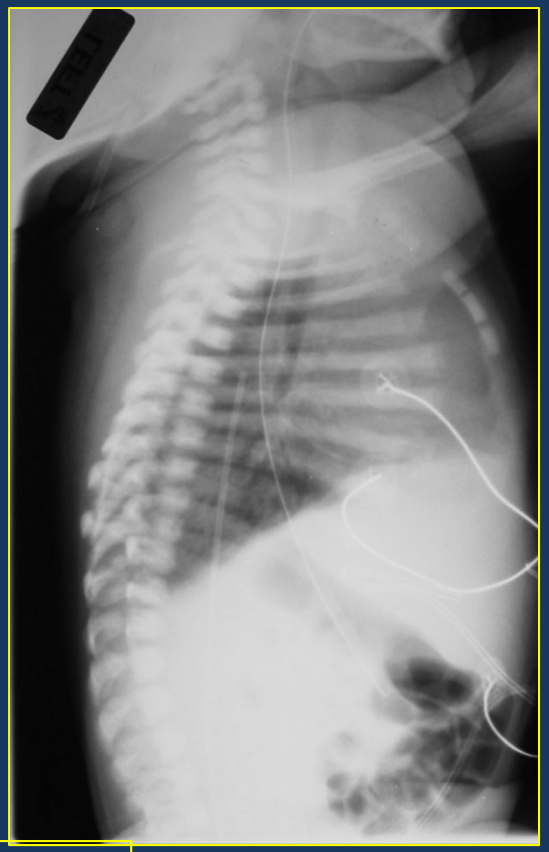

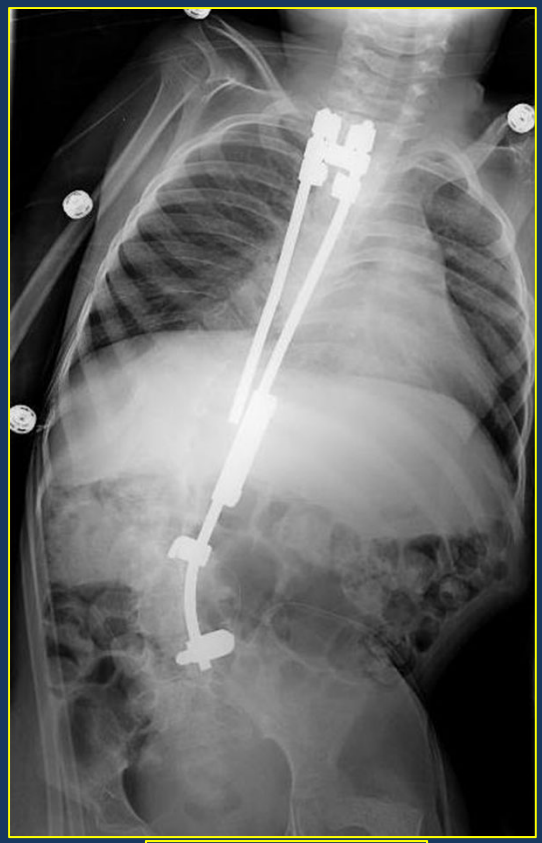

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Four y/o Boy with Arthrogryposis

- Patient is doing well after his latest successful lengthening

1/18/2010

9/26/2011

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Limitations / Next Phase

- Retrospective, Short FU, missing data, Sample size

- Data clarification, Chronology, Definitions

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In Summary

- Post operative wound infection after GR surgery is common and treatment is complex, often requiring multiple surgical interventions.
- Nearly 1/2 of the patients (44%) needed more than one surgical intervention to eradicate the infection.
- Rod removal/exchange was required in 47% of patients; however, implants were replaced in 60% of patients.

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Thank You

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