

The treatment of the SSI in severe spinal deformity received PVCR: the hard choices of removing implants



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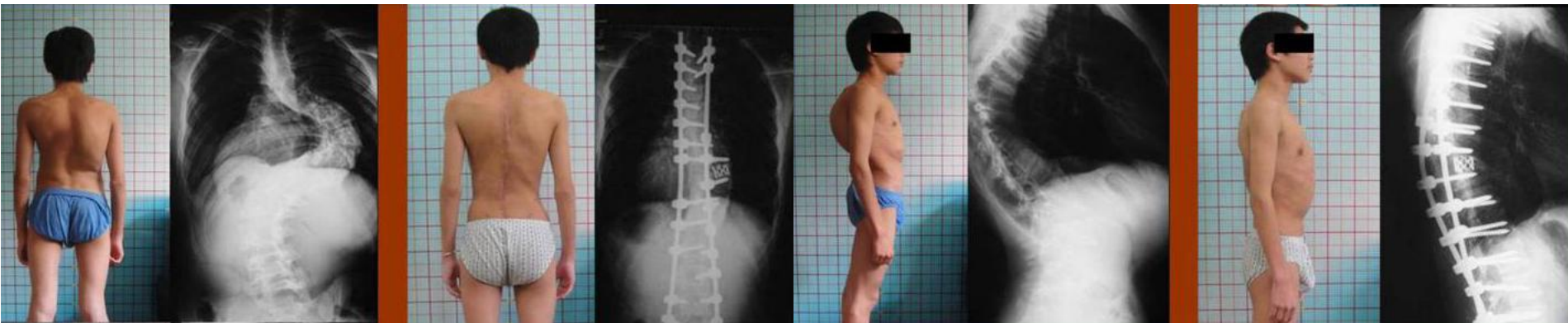
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Background

Posterior vertebral column resection--**PVCR**

----The most powerful technique to treat severe rigid spinal deformity !



BUT!!!

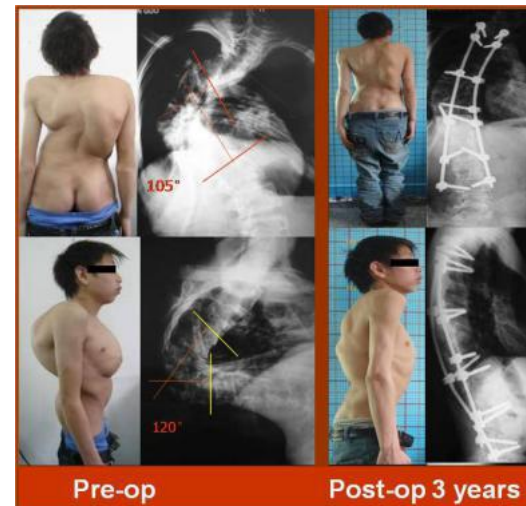
PVCR has been plague with high rate of neurologic deficits and non -nerurological complications due to complexity and extraordinary technique!



Background

- Surgical site infection (SSI) following spinal surgery is a frequent complication.
- Patients undergoing PVCR for severe spinal deformity have a higher risk of SSI.

- *Poor nutrition*
- *Longer operation time*
- *More fusion levels*
- *Larger blood losses*



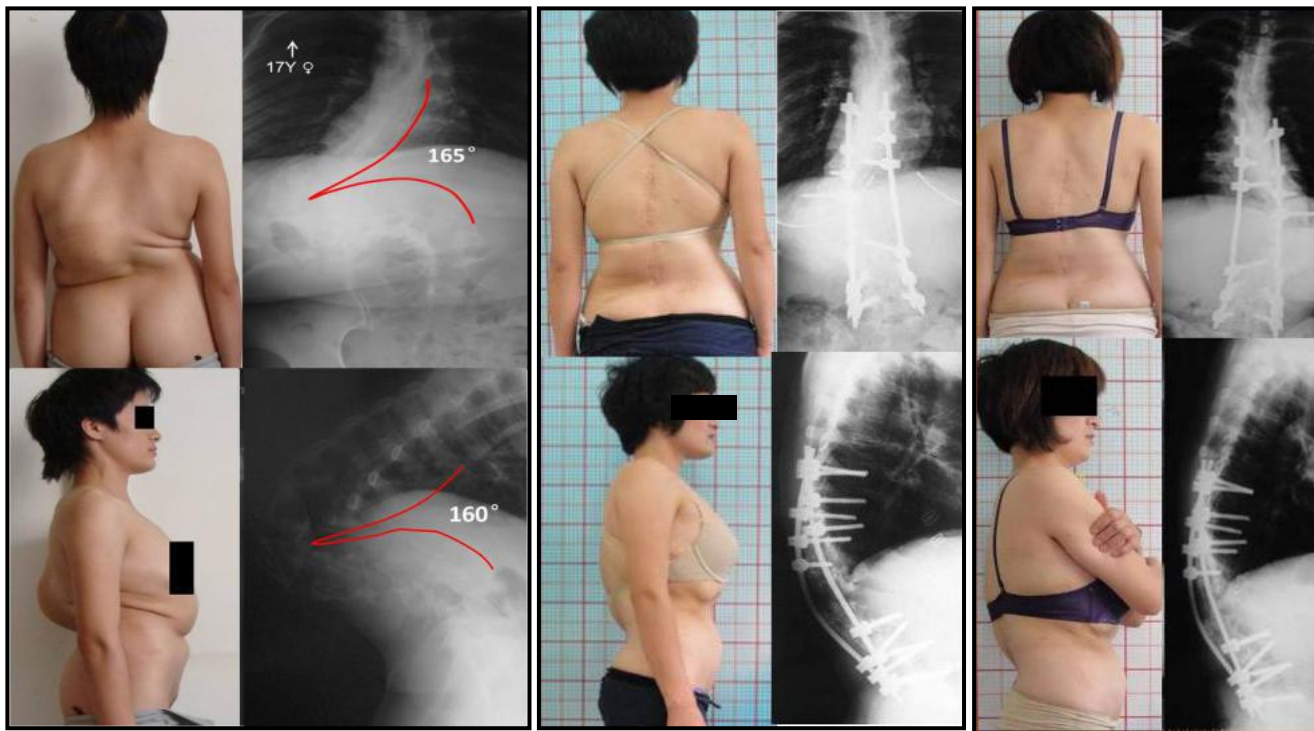
Especially!!!

- ***The stability of the spine depend only on the implant, and the surgeon should face a more intractable SSI in PVCR.***



Objective

- *To evaluate a single institute's experience with SSI after PVCR with a focus on the treatment.*



Methods

- A large case cohort analysis of all severe spinal deformity underwent PVCR in our institute.

----reviewed 158 patients' records.

- For SSI in PVCR , asses
 - the incidence,*
 - identify risk factors*
 - treatment*



- The medical records of patients who developed SSI were retrospectively reviewed in detail.



Methods

SSI was classified as

- *Type 1*: not involved implants
- *Type 2*: involved the posterior implants
- *Type 3*: type 2 + involved the anterior resection space. The medical records of patients who developed SSI were retrospectively reviewed in detail.

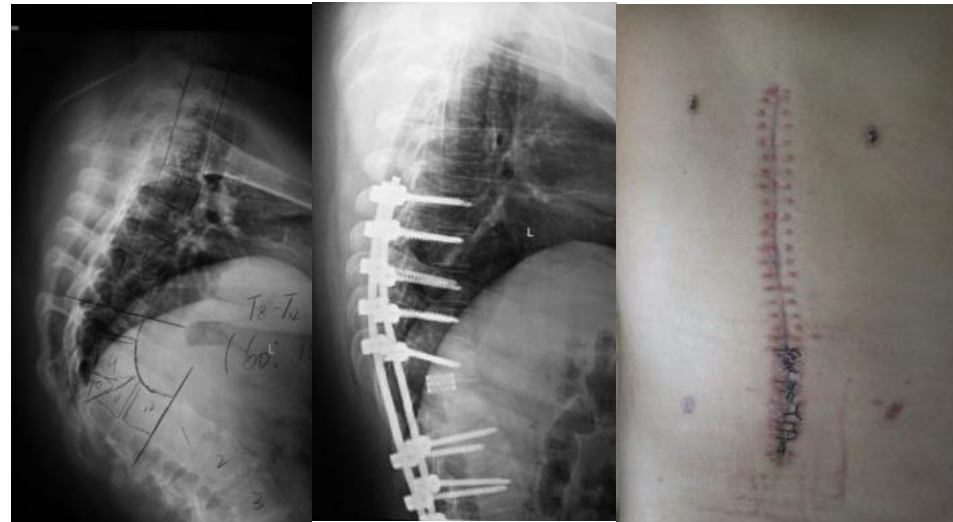


Results

SSI developed in 9(5.7%) patients:

- 4(2.5%) *patients having type 1 SSI*
- 5(3.2%) *having type 2 SSI*
- *no type 3 SSI*

- *6 patients were acute SSI*
- *3 patients were delayed SSI.*



Prophylactic antibiotics was administered pre-operatively and for 72 hours after surgery in all patients.



Results

- The escherichia coli was the most commonly identified organism.
- The most common complaints were swelling and drainage.
- *Poor nutrition* was found to be an independent risk factor for all SSI and type 1 SSI (P =0.035).
- *Drain removal delayed (>4 days)* due to excessive drain was also found to be a risk factor for type 2 SSI (P=0.018).



Results

- *All SSI patients received antibiotic treatment with a sufficient time.*
- All type 1 SSI were successfully treated with debridement and/or VSD.
- 4 patients with type 2 SSI were successfully treated with repeated debridement, VSD and/or irrigation.



Results

One patient developed type 2 SSI one year after PVCR:

1. *The infection recurred six months after 3 times debridement and VSD.*
2. Then, ***the patients received removing the implants, traction to maintain the spine stability and 5 times debridement.***
3. *Four months later, the implants were replaced again after ensuring the infection haven been controlled.*



Conclusions

- In PVCR, the treatment of refractory SSI is intractable, especially when the spine is not sufficiently stable.
- The treatment depend on whether the posterior implants and the anterior space were involved.
----Removing the implants was a tough but efficient choices.
- The classification of SSI presented in this study is more conducive to guiding clinical decisions in osteotomy surgery that require implants to provide the spinal stabilization.
- ***Active prophylactic antibiotics is necessary to avoid catastrophic type 3 SSI.***



Disclosures

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Tao Li	No Relationship
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