Complications after posttraumatic dorsal cervical spine spondylodesis

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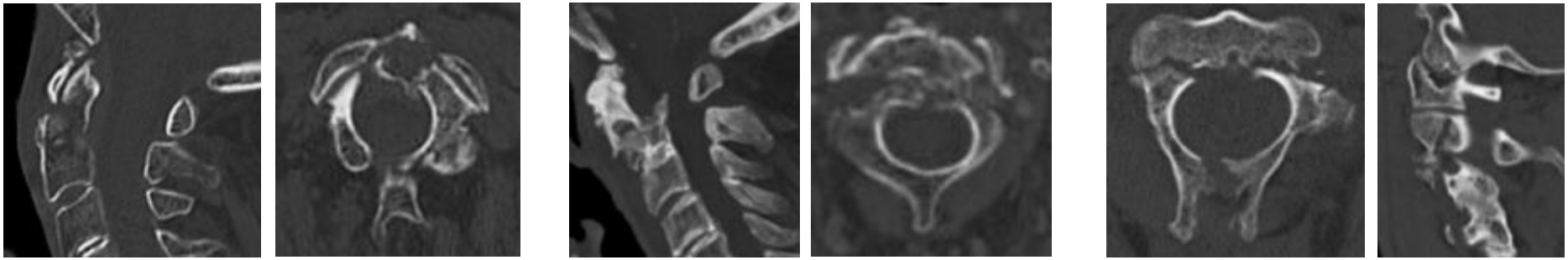
Background

- At least 25 % of spine injuries affect the cervical spine
- The aim of this study was to evaluate the complication rate of dorsal cervical spine fusion after cervical spine injuries in elderly patients



Methods

- 40 patients with fractures of the cervical spine were undergoing dorsal cervical spine instrumentation

- Surgical and general complications during the first 6 postoperative weeks were evaluated

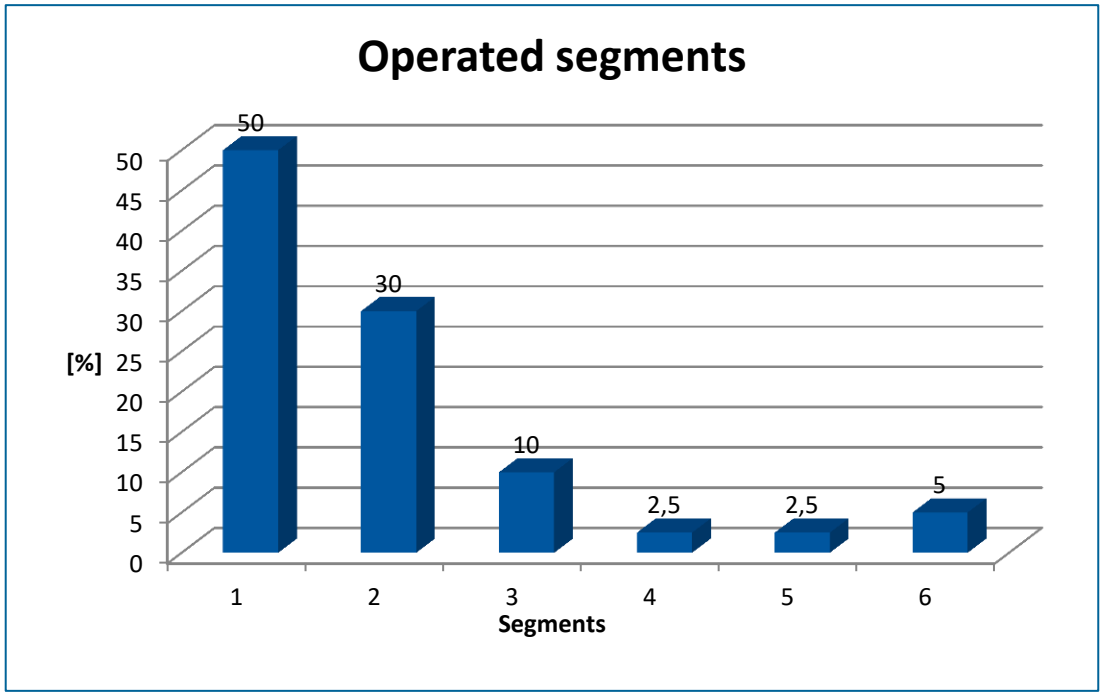
- Fisher's exact test, chi-square test and Mann-Whitney-U test were used for statistical analysis.

Baseline characteristics

		All patients
Gender	male [%]	52,5
	female [%]	47,5
Age [years]		71,6
ASA Score [%]	1	0
	2	40
	3	52,5
	4	7,5
	5	0
Polytrauma [%]	Yes	55
	No	45
Anticoagulation [%]		32,5
Stay on ICU/IMC [%]	Yes	77,5
	No	22,5
Length of stay on ICU/IMC [days]		4
Blood transfusion [%]		20
Length of hospitalisation [days]		18
Catecholamine therapy [%]	Yes	12,5
	No	87,5
Duration of surgery [minutes]		229
Complications [%]	Surgical	7,5
	General	47,5
	None	45

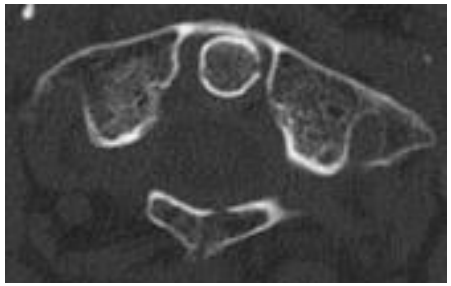
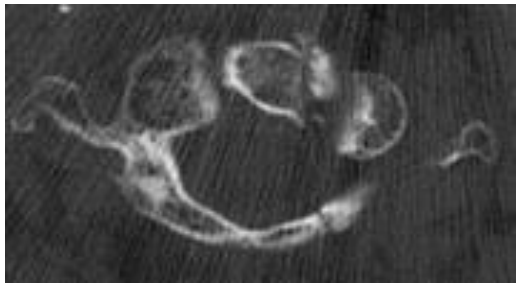
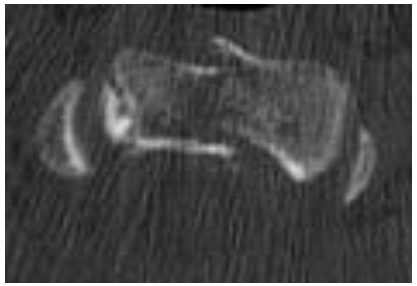
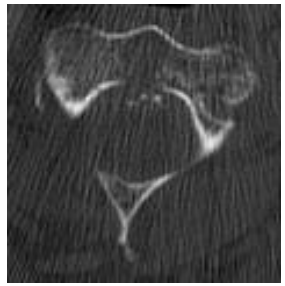
Results

- The mean age of the patients was 71.6 years
- Most frequent injuries: 90% affected the axis, 22.5% affected the atlas and 32.5% were combined fractures.
- Most patients had surgery of the upper cervical spine (C1/2: 50%, C1-3: 27.5%, C0-3: 5%)



Case example 1

- Male, 90 years, fall from low height
- Fractures of C1 (Gehweiler II) and C2 (Anderson III)

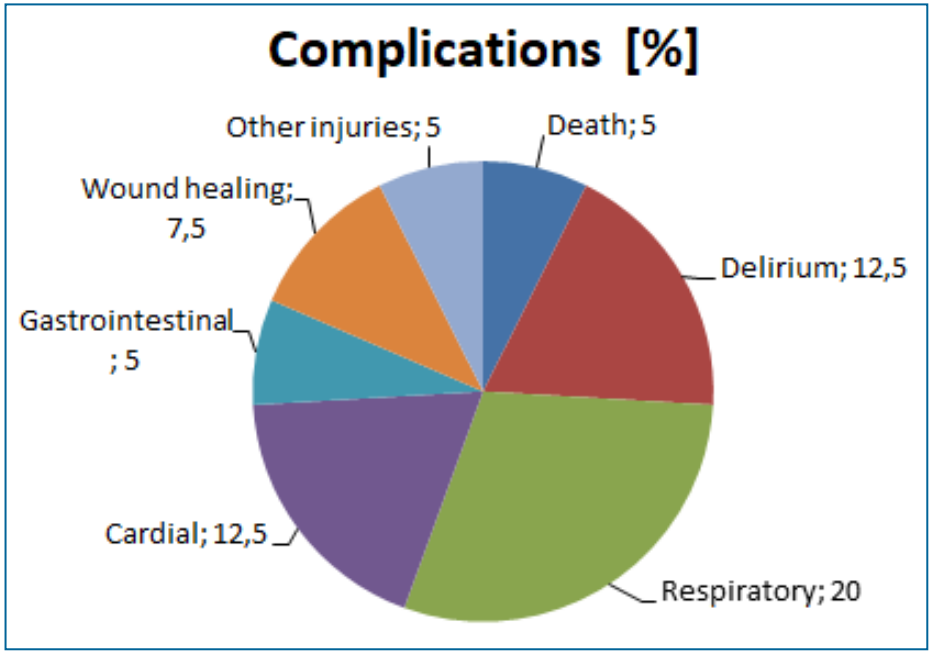





Case example 2

- Male, 30 years, accident on stairs
- Fracture of C2 (Anderson II with affection of facet joint)

Results

- No intraoperative complications or postoperative neurologic deficits were detected
- postoperative CT examinations showed proper alignment and correct implant position in all cases
- In 3 cases (7.5%) complications of wound healing
- In 19 cases (47.5%) general complications were registered
- In 2 cases (5%) the complications led to death due to sepsis and cardiogenic shock.



Results

- Significant correlation was shown between the occurrence of complications and
  - length of hospital stay($p<0.001$)
  - ASA-Score ($p=0.03$)
  - number of comorbidities ($p=0.022$)
  - number of drugs ($p=0.019$)
  - stay at ICU/IMC ($p=0.004$)

- No significant difference of patients with or without complications regarding age, gender, operated segments, multiple injuries and surgery time

Conclusion

- **High rate of general complications (47.5%)**
- **Low surgical revision rate (7.5%) and 6-week mortality (5%)**
- **In high-risk group (elderly patients with comorbidities), the general complications must be recognized and addressed early**

Disclosure declaration

The authors confirm that there are no conflicts of interest