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Treatment of Toracolumbar Transition Fractures type A3 and A4: Prospective study of pain and quality of life in Open vs. Percutaneous Arthrodesis

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Approximately 11,000 new cases of Spinal Injuries occur every year in the United States and approximately 250,000 people in this country have associated Spinal Cord Injury. The life expectancy for patients is shortened from 15 to 20 years. In the treatment, the open posterior approach, with midline incision for decompression and fusion is one of the most used techniques. However, is associated with the aggression of healthy tissue, muscle injury and increased rate of bleeding. In this context, Minimally Invasive Techniques have been increasingly used, with less damage to healthy tissues, less bleeding and reduced morbidities and complications. Nowadays, data favoring one technique over the other are insufficient, with a low number of patients studied, leading to inconclusive results and low clinical impact. Therefore, a prospective, longitudinal, multicenter study is being developed with the follow-up of individuals for 12 months. The primary objective is of assessing whether, for the treatment of Thoracolumbar Fractures, Minimally Invasive Surgery is superior to conventional surgery regarding postoperative pain and Quality of Life (QoL). All patients are being submitted to preoperative X-ray and computed tomography of the spine for decision-making and calculation of deformities. After the patients' written consent, an instrument containing the following data is being applied: demographic, hospitalization, clinical and neurological conditions and biomechanics. The following intraoperative data are being analyzed: type of surgery, number of levels fused, number of screws used, need for Laminectomy, need for previous instrumentation, blood loss, surgical time and occurrence of complications. The prognostic analysis is being performed through the application of pain and (QoL) questionnaires: Visual Analog Pain Scale, Oswestry Disability Index and SF-36. These assessments are being done at 15 days, 03, 06, 12 months after surgery. In this presentation, we will present the partial results obtained so far and the comparison of these with current literature.

Table 1 Comparison of published results describing intraoperative bleeding, operative time, infection rate and length of hospital stay.

	Intraoperative bleeding ^a		Operative time ^a		Infection rate		Length of hospital stay	
	Percutaneous	Open	Percutaneous	Open	Percutaneous	Open	Percutaneous	Open
Wild et al. [15], n = 21	194 mL (100–300)	380 mL (100–800)	87 min (63–120)	81 min (59–118)	0	0	NR	NR
Merom et al. [17], n = 20	50 mL	200–500 mL	73–85 min	78–102 min	0	1 (superficial)	1–2 days	3–4 days
Ni et al. [18], n = 36	75 mL	NR	70 min	NR	1 (superficial)	NR	5 days	NR
Schmidt et al. [16], n = 76	1 transfusion after add. ant. procedure	NR	47 min	NR	0	NR	NR	NR
Vertaan et al. [19]		1000 mL				3.1% to 10%		
Palmitani et al. [20], n = 64	NR	NA	120 min (60–240)	NA	1 (deep, instrumentation removed)	NA	NR	NA
Pelegrí et al. [21], n = 15	NR	NA	108 min (40–180)	NA	0	NA	NR	NA

NR: number of patients; min: minutes; mL: millilitres; NR: not reported; NA: not applicable; add. ant: additional anterior.
^a Short-segment fixation.

Figure 1 C. Court, C. Vincent. *Orthopaedics & Traumatology: Surgery & Research* (2012) 98, 900–909

Biography

Gibran Franzoni Rufca has completed his degree in Medicine and Neurosurgery from the School of Medicine of São José do Rio Preto. He lives in the state of São Paulo and his main institution is the Hospital Santa Casa de Ourinhos, where he and his team provide Neurosurgical Treatments, mainly for the pathologies of the Vertebral Column.

Gibran Franzoni Rufca and his team who were brought the first endoscopic functional surgeries and minimally invasive procedures of the spine into their region. In constant updating, inside and outside the country, He is currently also a master's degree student in the Post-Graduation Program of the University of São Paulo - Campus Botucatu where he is working in the research of Pain and Minimally Invasive Surgeries of the spine, under the coordination of Prof. Dr. Flávio Ramalho Romero.

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