

COMPARISON OF PULMONARY FUNCTIONS IN DOUBLE MAJOR IDIOPATHIC SCOLIOISIS PATIENTS OPERATED USING EITHER HYBRID OR ANTERIOR VERTEBRAL BODY TETHERING TECHNIQUES AFTER MINIMUM 2 YEARS FOLLOW-UP

Sinan KAHRAMAN, MD
Sanem ERYILMAZPOLAT, MD
Sina COSKUN, MD
Recep DINCER, MD
Mustafa ELTAYEP, MD
Ahmet ATES, MD
Ugur TASCI, MD
Ayhan MUTLU, MD
Tunay SANLI, MA
Meric ENERCAN, MD
Selhan KARADERELER, MD
Azmi HAMZAOGLU, MD

*Istanbul Spine Center
Florence Nightingale Hospital
Istanbul-TURKEY*



INTRODUCTION

Maturing and mature Idiopathic Scoliosis (IS) patients (Sanders 5-8) can be either treated with Hybride Technique (HT; thoracic posterior fusion, lumbar tethering) or anterior Vertebral Body Tethering .

We compared the clinical and radiological results and pulmonary function tests (PFT) in maturing and mature IS patients who underwent surgery with either HT and AVBT with 2 years f/up

MATERIAL & METHODS

- 35 (31f,4m) IS patients with Sanders (5-8) who underwent surgery were divided into 2 groups.
 - HT consisted of 17 patients with mean age 15 (12-22) and mean f/up was 30 months (24-52).
 - VBT consisted of 18 patients with mean age 15y9m (11-29), mean f/up was 35 months (24-52).

MATERIAL & METHODS

- The groups had similar preop coronal magnitudes and Sanders stages.
- They were compared with respect to coronal and sagittal Cobb angles, correction rates, PFTs using data from preop to last f/up.
- The correlation of PFTs between HT and AVBT was analyzed with Mann Whitney U test.
- SRS22 scores used for HRQoL

RESULTS

	Group-VBT n=18		Group-Hybride T. n=17	
	Preop	F/up	Preop	F/up
Pulmonary Function Test				
IC %	112 (94-139)	105 (58-146)	106 (83-141)	104 (60-161)
FVC %	92 (72-104)	79 (60-98)	83 (61-100)	81 (57-104)
FEV1 %	95 (80-112)	82 (68-106)	87 (63-105)	85 (58-107)
FEV1/FVC %	103 (94-117)	103 (95-118)	105 (96-112)	106 (98-109)

RESULTS

- There were no significant differences in %FVC, %FEV1 and %IC between the groups before surgery.
- Correction of the MT curve was significantly higher in HT than VBT ($p < 0.05$), whereas lumbar corrections were similar.
- Hypokyphotic patients constituted 8/17 (%47) of the patients in HT and 8/18 (%44) in VBT.
- Mean restoration of the kyphosis was higher in HT than VBT in sagittal plane.

RESULTS

- VBT showed a decrease in %FVC (preop 92 ± 11 , f/up 79 ± 13 , $p < 0.05$), %FEV1 (preop 94 ± 11 , f/up 82 ± 14 , $p < 0.05$) and %IC (preop 112 ± 18 , f/up 105 ± 31) compared to preop values.
- In contrast percent predicted values remained stable in HT for %IC (preop 106 ± 22 , f/up 104 ± 32), %FVC (preop 83 ± 13 , f/up 81 ± 14) and %FEV1 (preop 87 ± 15 , f/up 85 ± 14) ($p > 0.05$).
- However, after min 2-years f/up there was no statistically difference in SRS22r scores between groups($p > 0.05$).

CONCLUSION

Pulmonary function test values did not return to the preop baseline after 2 years in patients with VBT in double major curves, suggesting the possible influence of the bilateral thoracotomy.

CONCLUSION

In contrast, after 2 years f/up the HT preserves the lung functions by superior restoration of thoracic kyphosis compared to AVBT, and needs only a unilateral mini thoracotomy in patients with double major IS.

P84 - COMPARISON OF PULMONARY FUNCTIONS IN DOUBLE MAJOR IDIOPATHIC ...

Author

Sinan KAHRAMAN

Sanem ERYILMAZPOLAT

Sina COSKUN

Recep DINCER

Mustafa ELTAYEP

Ahmet ATES

Ugur TASCI

Ayhan MUTLU

Tunay SANLI

Meric ENERCAN

Selhan KARADERELER

Azmi HAMZAOGLU

Relationships Disclosed

No Relationship

No Relationship

No Relationship

No Relationship

No Relationship

No Relationship

No Relationship

No Relationship

No Relationship

No Relationship

No Relationship

Medtronic (a, b)

(a) Grant/Research Support

(b) Consultant

(c) Stock/Shareholder

(d) Royalties

(e) Other Financial Support