Severe Lung Function Does Not Preclude An Intercostal Nerve Transfer In Brachial Plexus Injury

[1]**Leong JF**, [1]Ahmad AA, [1]Sapuan J, [1]Abdullah S
[1]*Orthopaedic and Traumatology, Universiti Kebangsaan Malaysia*

INTRODUCTION:

Brachial plexus reconstruction with intercostal nerve (ICNs) following injury can be challenging, especially when there is some concern that the presence of ipsilateral phrenic nerve palsy may lead to significant compromise of respiratory function.

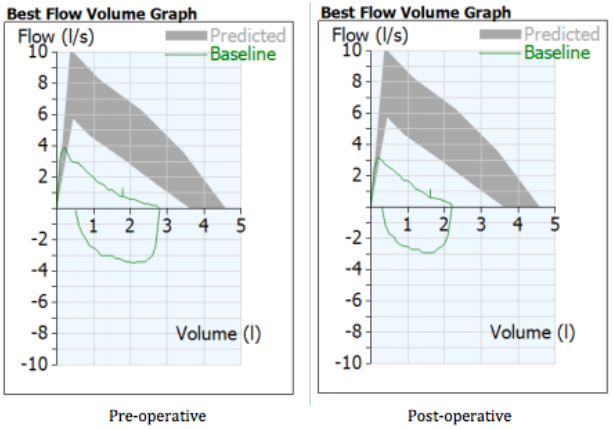
CASE REPORT:

A 17 year old man with 3 months history of a motor vehicle accident was diagnosed with close preganglionic brachial plexus injury involving C5 to T1. He sustained a left clavicle fracture and ipsilateral phrenic nerve palsy as evidence by his chest radiograph. His Lung function test pre-operatively reported moderate to severe obstruction.

Although it is common to use intercostal nerve transfer in patients with phrenic nerve palsy or previous ribs fracture, we were unsure if a lung function report of moderate to severe obstruction would have any effect. We were concerned that the procedure will worsen his lung function. A Lung function test done pre-op and a day post-op did show a decrease in FEV1 and FVC but not resulting in any respiratory distress

	Pre-op result			**Post-op result**		
Index	Base	% Pred.	Z Score	Base	% Pred	Z score
FEV1 (L)	1.79	53%	-41.6	1.62	48%	-46.1
FVC (L)	2.77	68%	-41.8	2.24	55%	-58.1
PEF (L/min)	235	49%	-26.3	188	39%	-31.3
FEV1/FVC (%)	**65**	**77%**	**-4.4**	**72**	**86%**	**-2.7**
Lung Age	24 years			24 years		

Table shows lung function test result of pre-op and post-op.



Graph of Pre-op and post–op best flow volume

DISCUSSIONS:

Previous studies have claimed ipsilateral rib fracture and ipsilateral phrenic nerve palsy as contraindicatios to ICN transfers[1]. But current literature by Giddin et al. reveled no significant reduction in respiratory function following ICN transfer[2].

CONCLUSION:

We have shown in our patient that Intercostal nerve transfer does not worsen respiratory function for patient with phrenic nerve palsy.

REFERENCES:

1. Ruch DS et al. The restoration of elbow flexion with intercoastal nerve transfers. Clin Orthop Relat Res 1995;314:95-103
2. Gidden GE et al. The effect of unilateral intercostal nerve transfer upon lung function. J Hand Surg 1995;20B:675-676