

ARTHROSCOPIC DIAGNOSIS OF PRE-DYNAMIC AND DYNAMIC SCAPHOLUNATE INSTABILITY

Essam Awad El-Karef, Mohammad Hasan Ahmad, Ahmed Magdy Ibrahim Mohamed Attia

Department of Orthopaedic Surgery and Traumatology, Faculty of Medicine, Alexandria University

Introduction

Scapholunate interosseus ligament (SLIL) injury is a common wrist ligament injury causing stiffness and pain. If untreated, it can lead to wrist arthritis and carpal instability. Injuries often result from falling on an outstretched hand. Pre-dynamic and dynamic scapholunate instability are considered among the leading causes of wrist pain that might be clinically challenging to diagnose because the radiological findings are often not conclusive. Arthroscopic examination is now regarded as the gold standard for direct visualization of the SLIL

Aim of the work

We aimed to diagnose two types of SLIL instability, pre-dynamic and dynamic, using wrist arthroscopy, and study the correlation between findings of the wrist arthroscopy, radiological data, and clinical data.

Patients and Methods

20 patients were admitted to El-Hadara University Hospital suffering from dorsal wrist pain and suspected to have SLIL instability after their evaluation radiologically and clinically using X-rays and (Magnetic Resonance Imaging) MRI. Arthroscopic diagnosis, injury staging, and management were applied to all patients based on the arthroscopic findings, Geissler, and European Wrist Arthroscopy Society (EWAS) classifications.

Results

Table (1) : Summary of the arthroscopic findings.

Arthroscopic findings			No.	%
Geissler’s classification	I		2	10
	II		12	60
	III		6	30
EWAS classification	I		2	10
	II		4	20
	III	Total	14	70
		III a	8	40
		III b	2	10
		III c	4	20
TFCC tear	No		8	40
	Yes	Total	12	60
		Central tear	9	45
		Peripheral tear	3	15
Lunotriquetral instability	No		16	80
	Yes		4	20
Synovitis	Minimal		12	60
	Extensive		8	40
Dorsal impingement	No		16	80
	Yes		4	20

Table (2): Relation between widening of the scapholunate gap in Dynamic view X-rays and EWAS classification.

EWAS classification	widening of the scapholunate gap in dynamic view X-rays				χ^2	MCp
	No (n = 12)		Yes (n = 8)			
	No.	%	No.	%		
1	2	17	0	0	9.165*	0.022*
2	4	33	0	0		
3a	5	42	1	38		
3b	1	8	3	13		
3c	0	0	4	50		

χ2: Chi-square test
MC: Monte Carlo
p: p-value for comparing between the different categories
*: Statistically significant at p ≤ 0.05

Conclusion

According to the EWAS classification of the arthroscopic findings in SLIL instability, 8 (40%) patients had an injury of the volar part of the SLIL (grade 3a EWAS). 12 cases (60%) experienced a triangular fibrocartilage complex (TFCC) tear. There was a statistically significant correlation between the widening of the scapholunate gap in dynamic view X-rays and the EWAS classification of SLIL injury. Debridement with pinning was performed under the image in 12 cases (60%) for SLIL injuries.

From all the available evidence, the best diagnostic tool for SLIL pre-dynamic and dynamic injuries is the wrist arthroscope and the best management is the direct performing of an early surgical intervention when the case is diagnosed. TFCC tears are a common finding in SLIL instability patients, and any suspected cases of SLIL injury should be examined for TFCC with the arthroscope.