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Evolution in the Indication of Surgical Treatment on Degenerative Meniscal Tears In the Last 20 Years

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Disclosures:

Drs. Espejo-Reina and Espejo-Baena are paid consultants for Stryker Iberia



INTRODUCTION

- Degenerative meniscus tears (DMT) are very common, and they happen insidiously and progressively(1). Their treatment has traditionally been surgical, and mainly by performing arthroscopic partial meniscectomy (APM)(2).
- In the last years, the trends towards the treatment of meniscal tears have shifted to a more conservative attitude (3), especially since the publication of the consensus of ESSKA (4).
- Although a decrease in APM has been reported (5), the shift to a more conservative treatment in meniscal tears still seems difficult to achieve (6).



INTRODUCTION

- The aim of the present study was to analyze the evolution of the incidence of surgical treatment on DMT in the last 20 years
- The hypothesis of this work was that a decrease of surgical procedures on DMT, especially since the publication of the ESSKA consensus on DMT.



MATERIAL AND METHODS

DESIGN: cross-sectional descriptive study by reviewing data obtained from the surgical notes of the last 20 years (2002-2021) from patients who underwent arthroscopic knee surgery in a private center specialized in knee arthroscopy.

INCLUSION CRITERIA:

- Patients subjected to primary meniscal surgery.

EXCLUSION CRITERIA:

- Patients with previous surgery on the same knee
- All the tears prior to 2002 were discarded to establish a long-term but still modern starting point.



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MATERIAL AND METHODS

VARIABLES:

- Age (measured in years and stratified in 4 groups for comparative purposes: 0-15 years, 16-30, 31-45 and >45)
- Sex (male or female)
- Knee (right or left)
- Meniscus (medial or lateral)
- Tissue quality (i.e., degenerative or nondegenerative; all DMT were considered as complex) was registered, as well as the presence of accompanying injuries.



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MATERIAL AND METHODS

VARIABLES:

- Morphology of the meniscal tear (longitudinal, horizontal, radial, flap, root avulsion, ramp lesion or complex)
- Meniscal radial location (zone 1: periphery; zone 2: middle third; zone 3: free edge)
- Location on the axial plane (anterior horn, middle third, posterior horn, or miscellaneous segments of the meniscus)



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MATERIAL AND METHODS

VARIABLES:

- All the variables described were compiled in a model specifically designed for knee arthroscopy, similar to the model published by the Meniscal Documentation Committee of ISAKOS (7).
- All the characteristics were extracted from a database built in a Microsoft Excel 2010 spreadsheet (Microsoft, Redmond, WA), which was anonymized by a person not related with the study.
- The review of the data was performed by a single orthopedic surgeon, specialized in arthroscopic knee surgery.



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RESULTS

DATE	TQ	SEX (%)			AGE (%)					KNEE (%)		
		MALE	FEMALE	P value	<16	16-30	31-45	>45	P value	RIGHT	LEFT	P value
2002-2006	NDMT	77 (41.4)	14 (23)	.01	4 (100)	15 (68.2)	56 (50.9)	16 (14.4)	<.001	49 (38.9)	42 (34.7)	.496
	DMT	109 (58.6)	47 (77)		0 (0)	7 (31.8)	54 (49.1)	95 (85.6)		77 (61.1)	79 (65.3)	
2007-2011	NDMT	276 (68.1)	75 (52.4)	.001	9 (81.8)	140 (97.2)	141 (63.8)	61 (35.5)	<.001	176 (63.3)	175 (64.8)	.713
	DMT	129 (31.9)	68 (47.6)		2 (18.2)	4 (2.8)	80 (36.2)	111 (64.5)		102 (36.7)	95 (35.2)	
2012-2016	NDMT	381 (82.6)	97 (82.9)	.941	21 (100)	230 (88.8)	203 (84.2)	28 (45.2)	<.001	260 (83.6)	222 (81.6)	.528
	DMT	81 (17.4)	20 (17.1)		0 (0)	29 (11.2)	38 (15.8)	34 (54.8)		51 (16.4)	50 (18.4)	
2017-2021	NDMT	348 (92.6)	116 (84.1)	.004	22 (91.7)	200 (98)	186 (94.4)	56 (62.9)	<.001	274 (90.1)	190 (90.5)	.897
	DMT	28 (7.4)	22 (15.9)		2 (8.3)	4 (2)	11 (5.6)	33 (37.1)		30 (9.9)	20 (9.5)	

RESULTS

DATE	TQ	MENISCUS (%)			ZONE (%)				REGION (%)					TYPE OF TEAR (%)						P value	
		MED.	LAT.	P value	1	2	3	P value	MISC.	AH	MT	PH	P value	COM P.	LONG .	FLAP	RADIAL	HORIZ.	ROOT		RAMP
2002-2006	NDMT	57 (33.9)	34 (43)	.166	24 (34.3)	47 (36.4)	20 (41.7)	.710	18 (30)	4 (30.8)	21 (60)	48 (34.5)	.020	40 (26.5)	5 (33.3)	28 (66.7)	14 (46.7)	4 (44.4)			<.001
	DMT	111 (66.1)	45 (57)		46 (65.7)	82 (63.6)	28 (58.3)		42 (70)	9 (69.2)	14 (40)	91 (65.5)		111 (73.5)	10 (66.7)	14 (33.3)	16 (53.3)	5 (55.6)			
2007-2011	NDMT	216 (61.7)	135 (68.2)	.130	217 (76.1)	105 (54.7)	29 (40.8)	<.001	123 (66.8)	15 (50)	25 (58.1)	188 (64.6)	.274	50 (25.8)	206 (93.6)	24 (57.1)	57 (79.2)	11 (78.6)	3 (50)		<.001
	DMT	134 (38.3)	63 (31.8)		68 (23.9)	87 (45.3)	42 (59.2)		61 (33.2)	15 (50)	18 (41.9)	103 (35.4)		144 (74.2)	14 (6.4)	18 (42.9)	15 (20.8)	3 (21.4)	3 (50)		
2012-2016	NDMT	237 (86.5)	245 (79.3)	.022	241 (88.3)	180 (82.9)	61 (65.6)	<.001	119 (80.4)	15 (50)	58 (81.7)	290 (86.8)	<.001	102 (54.5)	224 (96.1)	46 (100)	80 (95.2)	18 (90)	11 (91.7)	1 (100)	<.001
	DMT	37 (13.5)	64 (20.7)		32 (11.7)	37 (17.1)	32 (34.4)		29 (19.6)	15 (50)	13 (18.3)	44 (13.2)		85 (45.5)	9 (3.9)	0 (0)	4 (4.8)	2 (10)	1 (8.3)	0 (0)	
2017-2021	NDMT	300 (92)	164 (87.2)	.078	353 (94.6)	98 (77.8)	13 (86.7)	<.001	56 (82.4)	11 (68.8)	24 (88.9)	373 (92.6)	.001	69 (67.6)	284 (96.9)	14 (82.4)	25 (92.6)	9 (100)	50 (94.3)	13 (100)	<.001
	DMT	26 (8)	24 (12.8)		20 (5.4)	28 (22.2)	2 (13.3)		12 (17.6)	5 (31.3)	3 (11.1)	30 (7.4)		33 (32.4)	9 (3.1)	3 (17.6)	2 (7.4)	0 (0)	3 (5.7)	0 (0)	



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TQ: Tissue quality; NDMT: non-degenerative meniscus tear; DM: degenerative meniscus tear; MED.: medial; LAT.: lateral; Misc: miscellaneous regions affected. AH: anterior horn; MT: Middle third; PH: posterior horn; COMP.: complex; LONG.: longitudinal; HORIZ.: Horizontal.

RESULTS

- 1892 patients met the criteria for inclusion
- DMT were present in 26.6% of cases; this percentage has significantly evolved, from a 63.2% in 2002-2006 to 9.7% in 2017-2021 ($p < 0.001$).
- Figures were lower in males in 2017-2021 (7.4 vs 15.9%; $p < 0.05$), but the decrease was stronger in females (61.1 vs 51.4%).
- Patients < 30 y.o. had DMT in $< 20\%$ at all moments. The main drop in DMT happened in patients > 45 y.o., from 85.6% in 2002-2006 to 37.1% ($p < 0.001$).
- $> 50\%$ decrease in DMT was found in both knees; very small differences were found between both menisci.
- The peripheral zone and the posterior horn of the meniscus experimented the highest drop in DMT (5.4% and a 7.4% respectively in 2017-2021). The anterior horn kept over $> 30\%$ of DMT ($p < 0.001$).
- The percentage of DMT dropped in all types of tears (stronger decrease in longitudinal tears).



CONCLUSIONS

Arthroscopic procedures on degenerative meniscal tears decreased along the last 20 years up to 9.7% of the cases, especially due to a decrease in surgical treatment in patients >45 y.o., in longitudinal tears and in tears on the posterior horn of both menisci



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