

5<sup>th</sup> Advanced Course on Knee Surgery



**Old injury, same old trouble**

Nicola Maffulli




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**Periosteal high volume image-guided injection of recalcitrant medial collateral ligament injuries**


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**Medial Collateral Ligament**

• Mechanism – direct blow to lateral side or externally rotated tibia on fixed femur



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**Management**

- Subset of patients - chronic, debilitating injury

- ✚ poor function
- ✚ recurring pain

➡ Recalcitrant MCL injury






Figure 4 The image of the right knee shows a thickened MCL (indicated by the arrow) and a normal anterolateral ligament. There is an increased signal on magnetic resonance imaging within the ligament; however, this thickening is likely to be associated with chronic injury.



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**The Intervention**

- Periosteal high volume image guided injection (PHVIGI)
- 12 mL (10 mL 0.5% bupivacaine HCl + 25-50 mg hydrocortisone acetate)
- Periosteal attachment (femoral/tibial) – under US guidance
- Strip and irritate periosteum → recommence healing



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**PHVIGI**


- Safe, relatively cheap, 1 injection, RTS quickly
- Used at London Independent for treatment of recalcitrant MCL injury
- Does it work?



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### Methodology

- All patients who received PHVIGI in 3 years (n=28)
- Study specific questionnaire and 2 copies of IKDC subjective knee form (prior to PHVIGI and at follow up)
- Sporting details, improvement on VAS, overall recovery, RTS, other management


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### Results

- 68% response rate
- 3 excluded due to concomitant injury/arthroscopy
- Mean age 33.3 (SD = 10.6) years
- Mean duration of symptoms 5.4 (SD = 6.6) months
- Mean follow up 8.9 (SD = 8.2) months

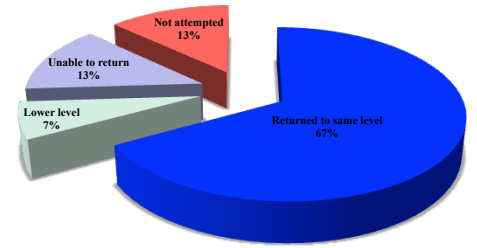

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### Demographics

Patient	Sex	Age	Hours	Level	Duration	RTS	Recovery	VAS %	IKDC Change	FU (mts)
1	M	33	16 to 20	Professional	3	Yes	Normal	100	67.8	17
2	M	40	5 to 10	Local club	2	Yes	Normal	100	46	6
3	M	39	11 to 15	Professional	2	Yes	Normal	94	63.2	2
4	M	36	11 to 15	Professional	1	Yes	Normal	93	57.5	7.6
5	F	50	<5	None	3	N/A	Improved	86	43.7	1.25
6	M	18	>20	Local club	27	Yes	Normal	83	48.3	11
7	M	23	16 to 20	Semi Pro	6	Lower	Improved	68	18.4	14.5
8	M	26	5 to 10	Professional	1	Yes	Normal	67	55.2	20.5
9	M	43	11 to 15	Local club	1	No	Recurred	34	33.3	27
10	M	26	11 to 15	Semi Pro	6	No	Improved	21	34.5	19
11	F	31	>20	Professional	4	Yes	Recurred	78	40.3	1.5
12	M	32	<5	Unemployed	12	N/A	Improved	57	15.5	2
13	M	32	5 to 10	Local club	4	Yes	Normal	90	33.4	2.7
14	M	60	5 to 10	Local club	1	Yes	Normal	100	36.6	3.2
15	M	28	5 to 10	Local club	10	N/A	Improved	62	30	3
16	M	35	16 to 20	Professional	4	Yes	Improved	71	43.6	4.5

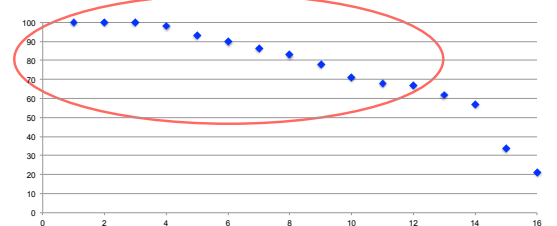

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### Return to Sport





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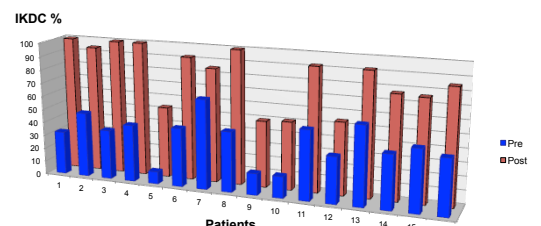
### Improvement on VAS




Mean percentage improvement after PHVIGI was **76%** (95% CI, 63.9 – 87.1)

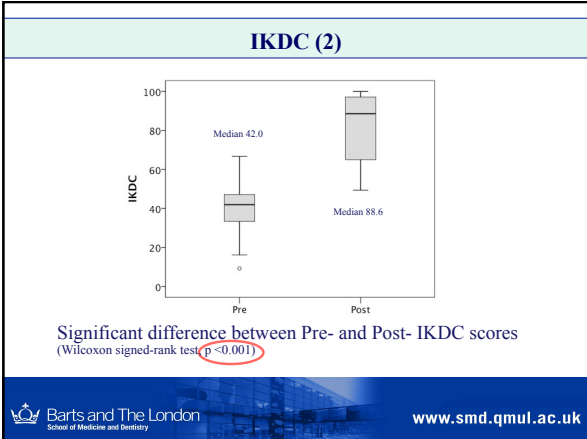

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### IKDC (I)



Mean improvement in IKDC scores = **42%** (95% CI, 35.0–48.9)


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- ### Discussion
- Of note: no peri/post procedure complications in 87.5%
  - All had significant pain relief immediately
  - Positive results

- ### Limitations
- Sample size
  - No control group
  - Recall bias

- ### Conclusion
- PHVIGI – Beneficial *and* safe for use in recalcitrant MCL injury
  - In our setting, common
  - Suitable for professional athletes – RTS relatively quickly
  - Large, prospective, RCT needed

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High-volume image-guided injection for recalcitrant medial collateral ligament injuries of the knee  
O. Drumm<sup>1</sup>\*, O. Chan<sup>2</sup>, P. Malliaras<sup>3</sup>, D. Morrissey<sup>4</sup>, N. Mathallil<sup>5</sup>

metabolic diseases and tendinopathies: the missing link

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*Thank You....*

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