

Does contamination during harvesting as well as during suture preparation and manipulation of the hamstrings graft for anterior cruciate ligament reconstruction correlates with postoperative infection ?



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# Introduction

- Positive cultures ranging for 2 to 23% in the hamstring tendons graft among the studies.
- In only one out of twenty one cases of positive graft culture and post-operative septic arthritis in the same patient was observed but the contaminating organism was different from the organism isolated from the infection
- Numerous studies have demonstrated the effectiveness of the “vancomycin wrap” in reducing infection rates compared to the use of preoperative prophylactic antibiotics alone , but the cost and the possible effects on the grafts properties remain controversial



# Purpose

- Evaluation of the incidence of hamstring auto graft contamination at different time points of graft harvesting and preparation
- Investigation of differences in contamination between the phases of ACL reconstruction
- The association between intraoperative contamination and the development of clinical infection



# Methods

- Study selection was between 10/2021 – 07/2022
- 33 hamstring tendon graft specimen culture
- 79% male – 21% female
- The average time between the harvesting to the final fixation of the graft was 36,36 minutes (30- 45min)
- Graft size was between 7-9mm
- Standard antibiotic prophylaxis before and after surgery
- Two graft samples were obtained. Sample one obtained immediately after harvesting , sample two after preparation and stabilization of the graft in the end of the procedure
- Cultures were obtained from both grafts and were classified as positive or negative



# Results

- Sample one had positive culture at a rate of 36% (12/33)
- Sample two was positive at a rate of 24% (8/33)
- The contamination rate was higher pre suturing than after manipulation and preparation
- CNS was isolated in 10/11 (91%) in sample 1
- CNS was isolated in 7/8 in sample two 87.5 %
- *Acinetobacter baumannii* , *klebsiella pneumonia* were isolated in both samples in one patient

SEX	AGE	CULTURE 1	CULTURE 2
M	20	CNS	(-)
F	32	-	-
M	22	-	-
M	25	-	-
M	34	CNS	-
M	45	-	-
F	32	CNS	CNS
M	27	-	-
M	21	-	-
F	17	CNS (Epidermis)	CNS (capitis)
M	24	-	-
M	24	-	-
F	17	-	-
M	24	-	-
M	23	-	-
M	24	CNS	CNS
M	30	CNS	CNS
M	26	CNS	-
M	55	-	-
M	23	A. BAUMANII , K. PNEUMONIAE SPP	A, BAUMANII , K. PNEUMONIAE SPP
F	26	-	-
M	55	-	CNS
F	75	-	-
M	21	CNS	CNS (SALIVARIUS)
M	26	-	-
M	40	-	-
M	22	CNS (EPIDERMIS)	CNS (EPIDERMIS)
M	15	-	-
F	22	-	-
M	16	-	-
M	33	-	-
M	48	-	-
M	30	CNS	-



# Results

- No statistically significant differences were found between the graft size and the time of preparation/manipulation
- No cases of postoperative septic arthritis were observed



# Conclusions

- Graft contamination during ACL reconstruction is common occurrence that must be considered. In the present study no correlation between graft contamination and postoperative septic arthritis.
- Nonetheless , standard prophylaxis (sterile operating room environment , appropriate patient preparation , including pre-washing with chlorhexidine, antibiotics ) remain key to preventing sepsis.





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