Anatomic anterior cruciate ligament reconstruction: a changing paradigm

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PREFACE

By prof. dr. C. Niek van Dijk

Over the last decades surgeons and industry have developed standardised techniques for ACL reconstruction. Techniques as o’clock reference, notchplasty and the use of drill guides have facilitated an easier and more efficient graft placement. In the past anatomic reconstruction was not a priority. These reconstructions resulted in stable knees and a high percentage of good results. But is nearly normal good enough?

It has become clear that conventional non-anatomic ACL reconstructions do not prevent the development of osteoarthritis after ACL injury, nor do they restore normal dynamic knee function.

The department of orthopaedic surgery in Pittsburgh has pioneered with anatomic reconstructions of the ACL. It is a personal privilege to collaborate with the Pittsburgh department and their inspiring leader Freddie Fu. I am extremely happy with the chance that has been given to Carola to work in his department.

Carola van Eck has achieved things that most people can only dream of. She didn’t do it with force, politics or money. She did it with hard work, enthusiasm and intelligence.

After completing her medical school training at the Academic Medical Centre of the University of Amsterdam she took the step to move to Pittsburgh to perform research on anatomic reconstruction of the anterior cruciate ligament. Since then Carola has been involved in over 20 projects, both at the AMC and at the University of Pittsburgh. More than 15 articles have already been published in various journals. Her research efforts have resulted in this PhD degree.

Carola has continued her work in Pittsburgh as a research coordinator. After that she would like to pursue a career as an orthopaedic surgeon. Recently she made an application for the US residency program and I am convinced that again she will succeed.

Over the past years I have got to know Carola as a hard working, driven, stress resistant, intelligent and reliable young woman with great potential for the future. Her impressive accomplishments at such a young age show her motivation. The mark of her success is her enthusiasm, endurance, and confidence to take on new projects.

I am convinced that the work of Carola will be a reference for the future.
PREFACE

By Freddie H. Fu, MD, DSc, DPs

The topic of Dr. Carola van Eck's thesis is "Anatomic ACL reconstruction: a changing paradigm", and this is a topic that I am very familiar with. There are 200,000 people who suffer ACL tears each year, and ACL surgeries are the sixth most common orthopaedic procedure performed here in the US. However, only 60% of patients have a satisfactory result. During my career I have performed more than 5,000 ACL repairs. Routine ACL surgical repair is performed in a so-called non-anatomic fashion, and the graft is not put in the same place where the native ACL would be. Preservation of long-term knee health is the main goal, and we are trying to achieve this by restoring the native anatomy of the ACL. This is done by applying the anatomic principle which is designed to restore both functional bundles of the ACL. By performing an anatomic reconstruction of the ACL we are attempting to restore knee function and reduce the development of post-traumatic knee osteoarthritis. Dr. van Eck's thesis describes this important change in the way we approach ACL repair.

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