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Università degli Studi di Pavia

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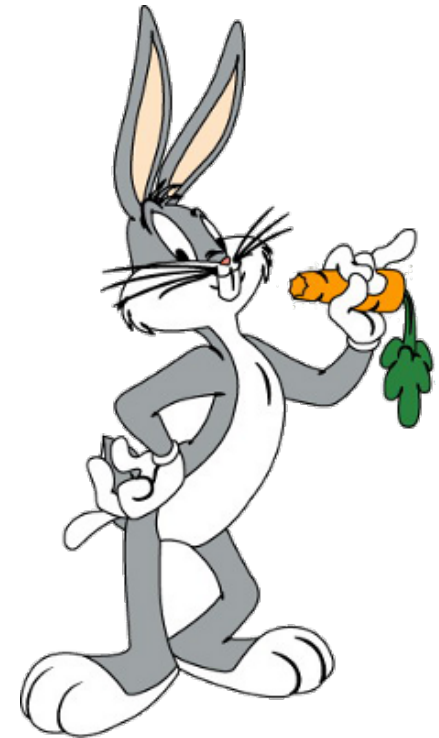


Fast Track

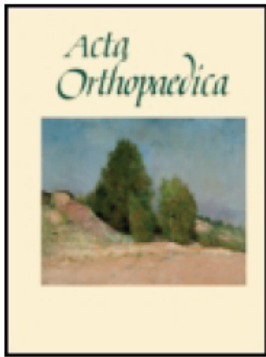
F. Benazzo, SMP Rossi, M. Ghiara

Fast Track

Why?



It works....



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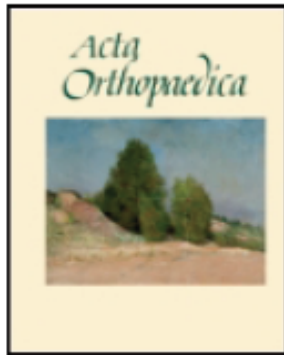


1-year follow-up of 920 hip and knee arthroplasty patients after implementing fast-track

Siri B Winther, Olav A Foss, Tina S Wik, Shawn P Davis, Monika Engdal, Vignleik Jessen & Otto S Husby

- Primary and Revision cases
- Reduced length of stay
- A high level of patient satisfaction
- Low revision rates, together with
- Improved health-related quality of life and functionality

It works....



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Low manipulation prevalence following fast-track total knee arthroplasty

Henrik Husted, Christoffer C Jørgensen, Kirill Gromov, Anders Troelsen
Collaborative Group of the Lundbeck Foundation Center for Fast-Track Hip and Knee Replacement, Henrik Kehlet, Kjeld Søbale, Torben B Hansen, Kjærsgaard-Andersen Søbale, T Hansen Lars & B Laursen Mogens

- Prevalence of manipulation was lower or comparable to more conventional pathways.
- Inherent patient demographics were identified as risk factors for manipulation whereas LOS \leq 4 days was not.
- Fast-track TKA does not result in increased risk of manipulation—despite a shorter LOS.

Fits all patients

Analysis of large-scale data supports that no patient should be excluded from a well defined program

Jørgensen CC, Kehlet H.

Role of patient characteristics for fast-track hip and knee arthroplasty.

Br J Anaesth 2013;110:972–80



Pain control and LOS

Pain, dizziness and general weakness together with organising factors are important for the first 24 hours. At 48 hours postoperatively, pain has a smaller role while dizziness, general “weakness” then become the most common explanations for prolonging hospital stay overall

➔ adjustment of perioperative care according to existing evidence will reduce LOS to two to four days with discharge to home

Husted H, Lunn TH, Troelsen A, Gaarn-Larsen L, Kristensen BB, Kehlet H.

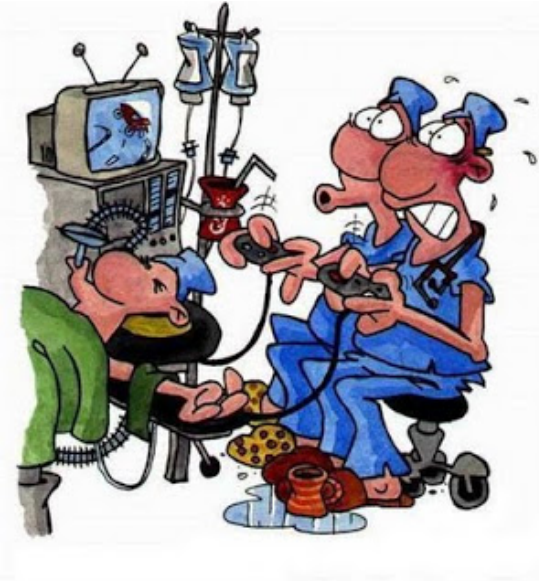
Why still in hospital after fast-track hip and knee arthroplasty?

Acta Orthop 2011;82:679–84

Kehlet H, Slim K. The future of fast-track surgery. Br J Surg 2012;99:1025–6

Any kind of anaesthesia?

Preliminary data suggest that general anaesthesia may be even preferable in a fast-track program



Harsten A, Kehlet H, Toksvig-Larsen S.

Recovery after total intravenous general anaesthesia or spinal anaesthesia for total knee arthroplasty: a randomized trial. Br J Anaesth 2013 (Epub) DOI:10.1093/bja/aet104

A stay in the post-anaesthesia care unit (PACU) should be reconsidered, since the use of an opioid-sparing fast-track setup may reduce or even eliminate the conventional stay in the PACU unit

Lunn TH, Kristensen BB, Gaarn-Larsen L, Husted H, Kehlet H.

Postanaesthesia care unit stay after total hip and knee arthroplasty under spinal anaesthesia.

Acta Anaesthesiol Scand 2012;56:1139–45

Multimodal pain control is fun and easier than you think

- Procedure-specific, pain treatment
- Intraoperative local infiltrations
- No peripheral nerve block
- Non opioid oral multimodal analgesia

Joshi GP, Kehlet H. Procedure-specific pain management: The road to improve postsurgical pain management? Anesthesiology 2013;118:780–2

➔ less side effects

➔ easier perioperative management and nursing

Single preoperative high-dose glucocorticoid?

Lunn TH, Kristensen BB, Andersen LO, Husted H, Otte KS, Gaarn-Larsen L, et al. Effect of high-dose preoperative methylprednisolone on pain and recovery after total knee arthroplasty: a randomized, placebo-controlled trial. Br J Anaesth 2011;106:230–8

Consider new problems and find new solutions

Orthostatic intolerance (OI)

- OI can be due to an impaired peripheral vasoconstrictor response and thereby reducing brain oxygenation during mobilisation in up to 20% of patients 24 hours after surgery
- Impaired haemodynamic responses to changes in position without association between bleeding, postoperative haemoglobin (Hb) concentration or opioid use



Jans O, Bundgaard-Nielsen M, Solgaard S, Johansson PI, Kehlet H.

Orthostatic intolerance during early mobilization after fast-track hip arthroplasty

. Br J Anaesth 2012;108:436–43

Consider new problems and find new solutions

Several studies have shown a pronounced loss of quadriceps muscle function amounting to about 70–80% two to three days after a TKA, which may contribute to the early general “weakness” leading to prolonged hospital stay

- ➔ MIS, muscle sparing approaches and Tissue sparing surgery
- ➔ Use of Tourniquet
- ➔ Pre-op muscle strength rehab
- ➔ Very early postop rehab protocols



New Solutions for Old Problems

Postoperative cognitive dysfunction (POCD) and sleep disturbances

- Interventions against delirium and POCD are multifactorial
- Reduction of both early delirium and later cognitive dysfunction by a well organised fast-track setup with discharge to home and multimodal opioid-sparing analgesia

Krenk L, Jennum P, Kehlet H. Activity, sleep and cognition after fast-track hip or knee arthroplasty. J Arthroplasty 2013 Doi 10.1016/j.arth.

2013.02.013

- Postoperative sleep disturbances have been reduced by fast-track TKA
- sleep disturbances still remain a problem for the first postop night

Krenk L, Jennum P, Kehlet H. Activity, sleep and cognition after fasttrack hip or knee arthroplasty. J Arthroplasty 2013 (Epub) DOI: 10.1016/j.

arth.2013.02.013

New Solutions for Old Problems

Bleeding, anaemia and transfusions

- Preoperative anaemia check and preparation
- Intraoperative reduction of bleeding, MIS, Tranexamic Acid
- Blood sparing and salvage protocols

Thromboembolic prophylaxis

- Conventional prolonged prophylaxis may not be required
- New oral anticoagulants
- Introduction of Aspirin at discharge



Safe protocols

Final purpose of fast track:

- provide the “pain and risk free operation”
- fast-track TKA large consecutive data suggest a reduced morbidity compared to existing literature and pre-institutional data

Malvyia 2011, McDonald 2012, Scott 2013, Jørgensen 2013

New Way of thinking and Organizing

- Profound organisational changes → multidisciplinary collaboration: orthopaedic surgeons, anaesthetists, nurses and physiotherapists
- Specific joint arthroplasty section
- Accurate scheduling of surgeries
- The additional need for post-discharge nurse and physiotherapy assistance continues to be debatable
- Cost of hospitalisation can be reduced by a shorter length of stay

But do not exaggerate!

- 3-4 days LOS it's typical European Philosophy for fast track
- American idea of "day case" can be detrimental if applied to majority/all of patients

“Day case”

- Applicable for UNIs
- TKA only in restricted group of patients (ASA 1 to 2, male, under 70 years of age)
- Really economically advantageous in a public health system?

“Day case”

A lot of things to be considered: everything should be optimized

Table I. Risk factors for patients unable to be discharged on the day of surgery

Risk factors	Reduced by pre-operative screening	Reduced by peri-operative treatment	Reduced by post-operative treatment
	Anaemia	Pain	Cognitive dysfunction
	VTE and PE	Bleeding	Orthostatic intolerance
	Muscle weakness	PONV	Comorbidity
	Social and organisational problems	Wound ooze	Mortality

VTE, venous thromboembolism; PE, pulmonary embolus; PONV, post-operative nausea and vomiting

E. Thienpont,
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■ INSTRUCTIONAL REVIEW

The constraints on day-case total knee arthroplasty: the fastest fast track

“Day case”

Need of:

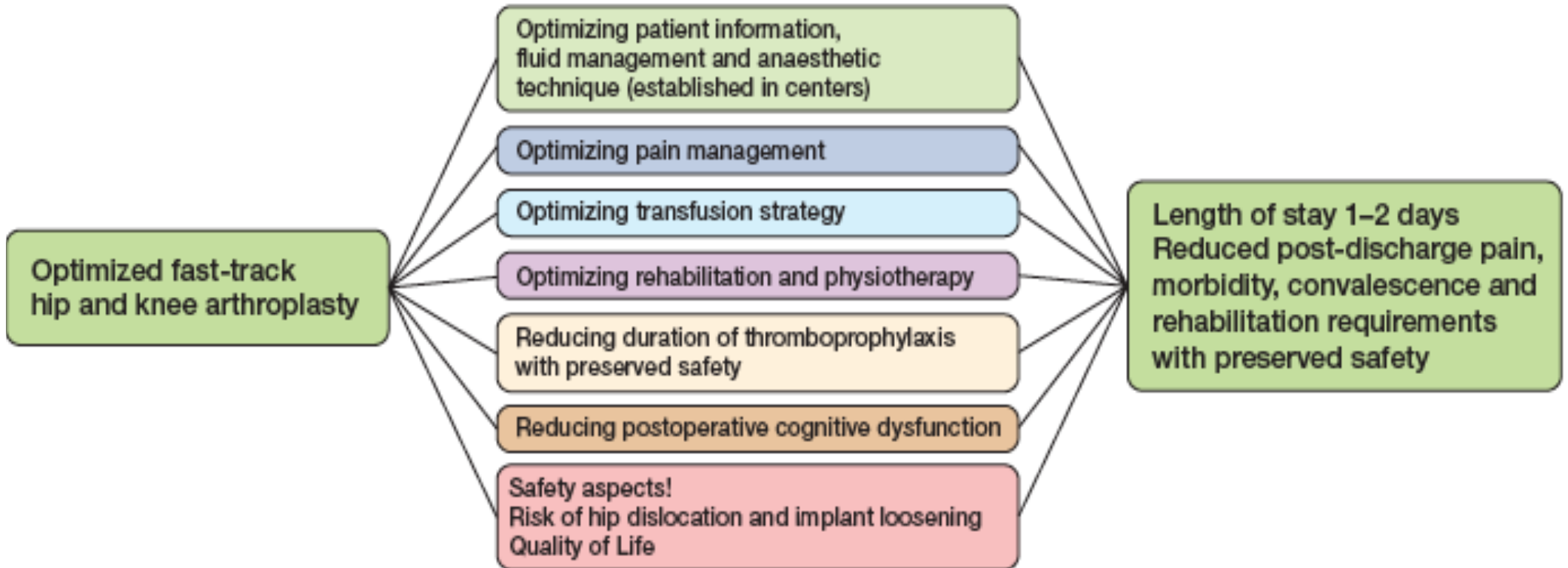
- an improved understanding of specific pre-operative risk factors
- better patient stratification and peri-operative medical treatment
- less invasive surgical techniques should be considered in the reduction of the 'surgical' effect on morbidity

“Day case”

Issues:

- where to discharge the patient: to their own home, a nursing facility or a rehabilitation centre
- cost of follow-up at home :visits by nurses, 24-hour on-call physicians being available for questions and to deal with complications and the cost of new technologies to follow-up patients from a distance.

“Summary”



Henrik Kehlet and Kjeld Søballe

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Guest editorial

Fast-track hip and knee replacement – what are the issues?

Fast track: It's evolution!!



1980



1990



2000



2010