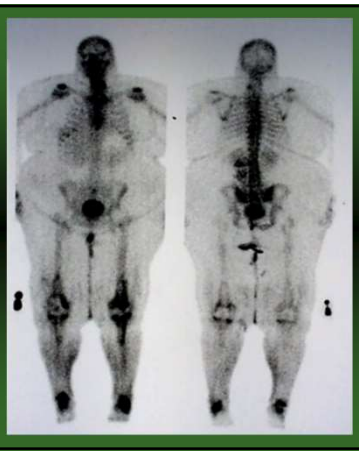

ARGUMENTS FOR OPERATING ON OBESE PATIENTS

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Arthroplasty Disaster Conference
September 20-22, 2018
MIAMI

DISCLOSURE

- IMPLANTCAST

NO ARGUMENTS REALLY….

OBESE PATIENTS: HIGHER RISK OF…

- Deep PJI Infection
- Dislocation
- Failure of fixation
- Poorer implant survivorship
- Poorer functional scores post op
- Non union
- Multi organ failure
- Death

COHORT STUDY, *Bourne & Col, CORR 2007*

- Cohort Study,
- 54406 patients from the Canadian Joint Registry
- Control group: subject with BMI < 25
- Higher risk of complications:

BMI		Increased risk TKA	Increased risk THA
< 25.	Normal	1	1
25-29.9	Overweight	3.2	1.92
30-34.9	Obese	8.53	3.42
35-39.9		18.73	5.24
> 40.	Morbid obesity	32.73	8.56

SIZE OF THE PROBLEM…

- Major health problem linked to a number of chronic medical conditions (diabetes, heart disease, cancer)
- In the US, cost : 275 billion $ / year .
  Haynes, BJJ 2017
- On the current trend, it is estimated that by 2030, almost half of the world population will be overweight or obese…

SO,WHY SHOULD WE?

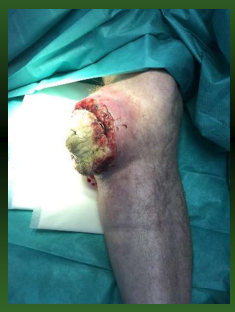
Because of the potential Benefits

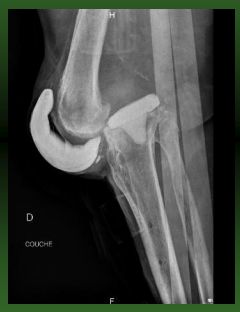
- Mrs Sabena story
- 300 pounds
- Obese
- Bilateral TKA???

- Benefit for the patient
- Both ways….

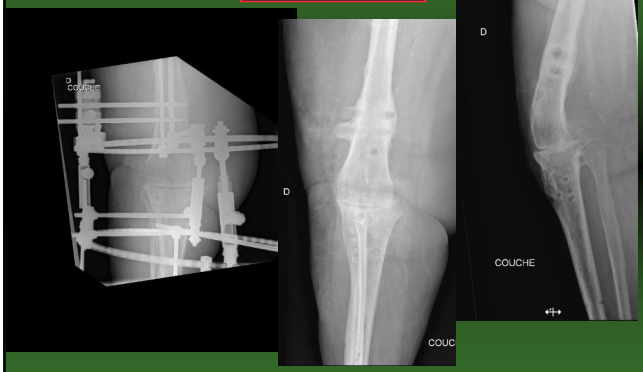
Benefit: Case discussion Madeleine

75 yo
BMI 39



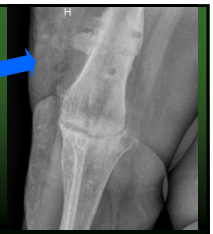


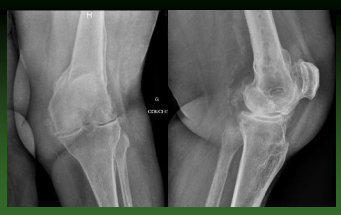
ARTHRODESIS



PLAN

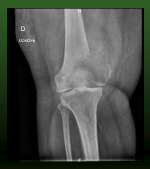
- **Right knee unstable but no pain**
- **Left knee very painfull, valgus deformity**
- **Patient can't walk**
- **Hinge prosthesis on the left knee to give her a strong left knee.....**

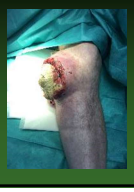




INDICATIONS

- Because we have to!
- Cancer
- Trauma
- Infection





Because we can decrease the rate of complications

- Nutritional evaluation
- Recent review of obese patients
  - 15% hypoalbuminemic
  - 93% with Vit D deficiencies
  - 36% with Iron Deficiencies

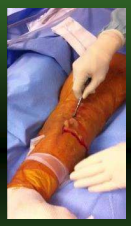
  Peterson LA, Obes Surg 2016
- Beware hypoalbuminemia : increased risk of post op complications +++

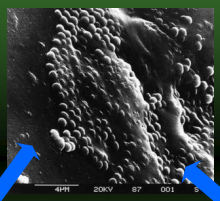
  Mihalko WM, J Am Acad Orthop Surg 2014

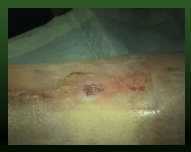
PREOPERATIVE WEIGHT LOSS ROLE OF BARIATRIC SURGERY

- Refer patients to a weight loss clinic
- Consider bariatric surgery if medical weight loss fails
- Controversial data???
- *Watts CD,BJJ 2016*: less reoperation rate in the bariatric group
- *Smith TO, BJJ 2016*: no differences in infection,VTE, or revision surgery

BMI > 40: HIGH RISK OF INFECTION







TKA: risk 8.92 higher

Dowsey MM &Col, CORR 2009

THA: risk 4.13 higher

Maoz G CORR 2014

BECAUSE WE CAN USE SILVER COATED IMPLANTS IF MEGAPROSTHESIS NEEDED

The Journal of Arthroplasty

Revision Arthroplasty

Silver-Coated Megaprosthesis of the Proximal Tibia in Patients With Sarcoma

- **Ninety-eight** patients with sarcoma or giant-cell tumour in proximal tibia
  - **titanium-implant (n=42)**
  - **silver-coated implant (n=56)**
- **16.7% infection rate** in titanium-group vs. **8.9%** in silver-coated group
- **5-year implant survival of 90%** in silver-coated group vs. **84%** in titanium group
- **In case of infection, patients with silver-coated implants had significantly better outcome**

Decrease the THA dislocation rate??

- **Definitely higher : for every 10 point increase in BMI, increased risk of 114%**

  Vazquez-Vela Johnson G, JBJS Br, 2003

- **Increase in head size: not protective**
- **However risk can be decreased by:**
  - **lower cup abduction angles**
  - **higher offset necks**

  Elkins JM, CORR 2013

Because risk of DVT is not higher (Hips and knees)

- No significant increase risk in asymptomatic DVT, symptomatic DVT or PE postoperatively for a cohort (12355 THA AND TKA) of morbidly obese patients (BMI > 40)

Friedman RJ & col., CORR 2013

- *D'Appuzo MR, & col., CORR 2015*
  - 1 777 609 TKA (98 040 morbidly obese)
  - no sig. difference in DVT rates
  - no sig. Diff. In PE rates

	BMI > 40	Non obese
DVT %	0.44	0.38
PE %	0.45	0.39

Because OUTCOMES are not that bad…

- Nonobese patients generally rate higher postoperative functionnal scores.
- TKA: Knee Society Scores better by 3.23 points on average.
- *Mulhall, J Knee Surg 2007*
- THA: Harris Hip Score better by 4.54 points on average.

Haverkamp D, Acta Orthop 2011

BUT the mean difference between preop and post op scores is often similar between obese and not obese patients.

- Control cohort study: Harris better in the nonobese (91 vs 85, $p<0.05$)
- Mean change in score from pre to postop similar in both group (52 vs 48)

p= 0.8

Chee & col.,JBJS Br, 2010

Because some areas are… immune to complications…!

- Upper limb distal to shoulder, hand and wrist
- Case control study
- Postoperative complications including infection, wound problems, nerve dysfunction ,reoperation rate between obese and non obese patients
- No significant association between obese and nonobese patients
- Evidence that upper limb distal to shoulder may be immune to some of the complications and worse outcome seen in other areas.

London DA & col., J Hand Surg Am, 2014

Take Home : Surgery and Obese patients YES! Take PRECAUTIONS

- Delay surgery to : - optimize the patient
  - improve the chance for a good outcome
- Nutritional evaluation (hypoalbumenia)
- Weight clinic
- Bariatric surgery may help
- Technically:
  - THA: lower cup abduction angles, higher offset necks
  - Use Silver coated implants if tumour implants needed

Take Home: Obese patients

- Information: higher risks especially around the knee
- Patients should be counselled (risks, realistic expectations of the outcome)
- Hand and wrist : no added risk (immunity to post op complications ??)
- No increase risk regarding DVT and PE (TKA and THA)
- Relative improvement in scores similar between obese and non obese patients

THANK YOU!