Hernia repair with 3-D- Meshes - first results of a multicenter study with more than 1000 patients

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Background: In Germany the health system is strictly separated in an ambulatory and a hospital sector. The percentage of day case Hernia surgery in Germany is very low comparing to the average of the industrial countries - last studies have shown a part of only 20%. The improvement of this part could save a lot of money. Large-scale data for the inguinal hernia repair in an ambulant setting are rare. 15 ambulant centres with daycasesurgery have an equal high quality like in the hospital sector. A. Koch, R. Lorenz, M. Wiese, P. Jülicher for the working group Quality Assurance in day case hernia surgery (akchirurg@aol.com)

Methods: We developed a large prospective multicenter study together with 16 specialized hernia centers in Germany. This could be a first possible step in the development of a country covering database. This study should show that results in the ambulatory sector have an equal quality like in the hospital sector. Prospective recording of all inguinal hernia repairs using 3D meshes since 1st October 2009 in a online based Hernia Database (www.qs-leistenhernie.de). Clinical examination 4, 12 weeks after surgery by the surgeon. We are presenting an analysis of the first 1322 cases.

Results: There are 1181 males and 141 females. The average age for males and females was 53 years. The average operation time was 38 minutes. There are 1179 primary and 143 recurrent hernias. Nearly 95% (n=1280) of all operations were performed using a general anaesthesia, local anaesthesia in 26 and regional anaesthesia in 11 cases. Ultra Pro Herniacyt (UHS, Gilbert Procedure) was used in 57 % and UPP (Ultra Pro Plug) in 43%. There were 6 infections (0,5%) and 9 early recurrences (0,7%) reported. Sensory disturbance was reported after 4 weeks in 12.4% and after 12 weeks in 4.8%. Inguinal pain was found after 4 weeks in 6.2% and after 12 weeks in 2.3%. Testicular pain after 4 weeks 2.3% and after 12 weeks 0.7%.

Conclusion: Although hernia repair with 3 dimensional partly resorbable meshes was not associated with more perioperative complications, and less impairment of inguinal sensibility after 12 weeks. Incidence of pain were comparable or less than other techniques. The ongoing data base is feasible to perform a continuous documentation and quality control in hernia surgery.

Start 1.10.2009
• 16 day surgery centers specialized in hernia surgery
• 30.08.2010
  – 1322 Patients enrolled
  – 1181 male (age median 53 ys.)
  – 141 female (age median 53 ys.)

First Results

12 weeks follow up
• Impairment of inguinal sensibility n=64 (4,8%)
• Testicular pain n=9 (0,7%)
• Inguinal pain n=30 (2,3%)
• Seroma n=7 (0,5%)
• Recurrence n=9 (0,7%)

Follow up
• 1116 complete follow up after 4 weeks
• 832 complete follow up after 12 weeks (follow up by physician)

Patients survey (Carolina Comfort Scale):
  – 1222 CCS letters dispatched by mail
  – 822 replied (67%)

Perioperative Data and Results

• Day surgery n=819 (62%)
• Short stay hospital n=499 (38%)
  – Op-time median 38 minutes
  – Primary hernias 1179
  – Recurrent hernias 143
  – 10,8% at all are recurrent hernias !

Anaesthesia

Used 3D Meshes

Cost savings
"...In the United States most hernia repairs (80-90%) are performed as day surgery procedure; 90% of operations are open herniorrhaphies with mesh. If in Germany an equal proportion of hernia repair as in the United States would be done as ambulatory procedure (80-90%), there would be an annual cost saving of several hundred million €...” (Holzheimer 2004)