

Berlin Workshop

„Laser In Proctology“

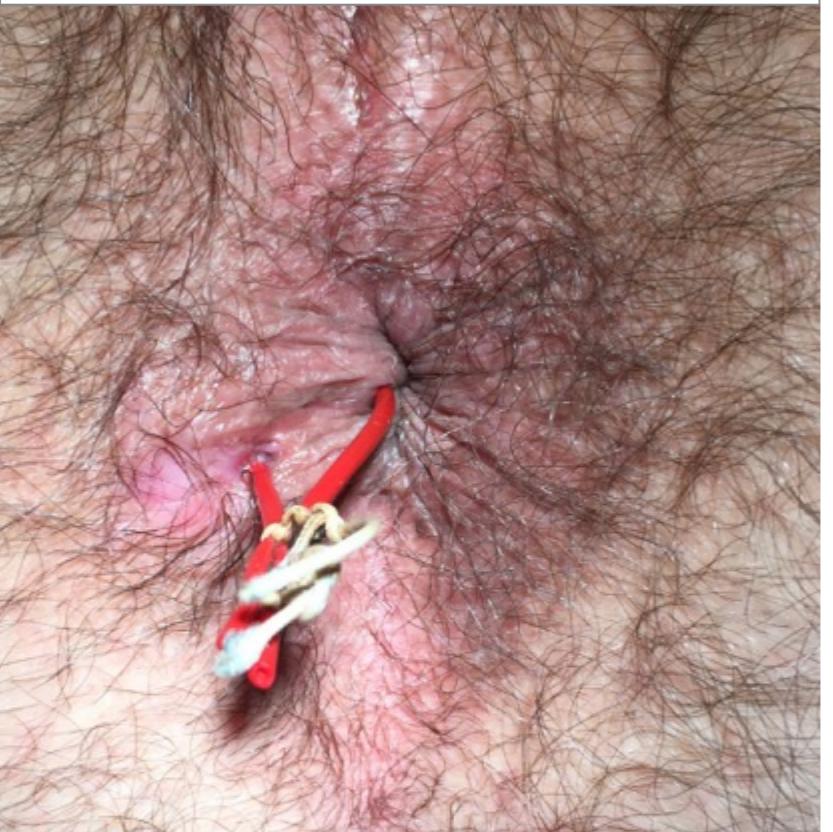
Internal Hemorrhoids
102 cases since 2013



External Hemorrhoids, Prolapse
251 cases since 2011



Anal Fistula
80 cases since 2012



Pilonidal Sinus
50 cases since 2012



Anal Fistula

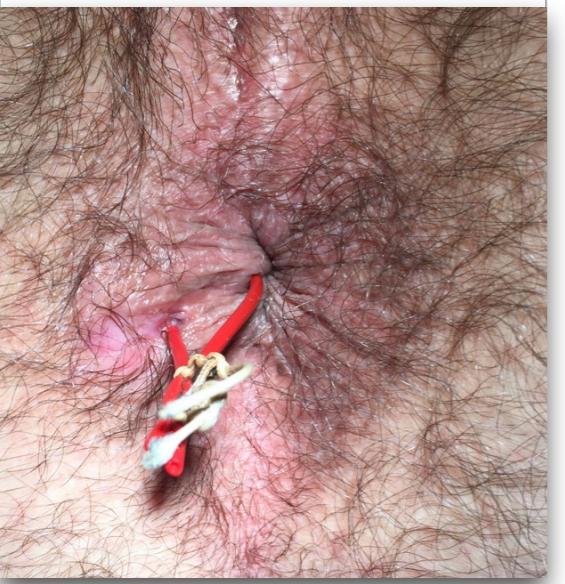
80 cases since 2012

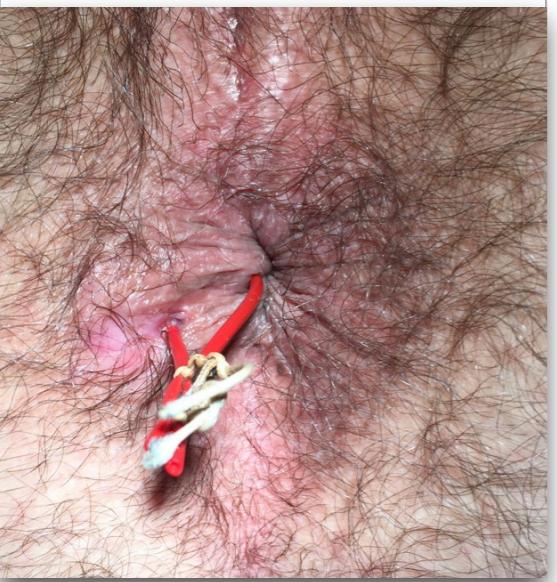


Anal Fistula

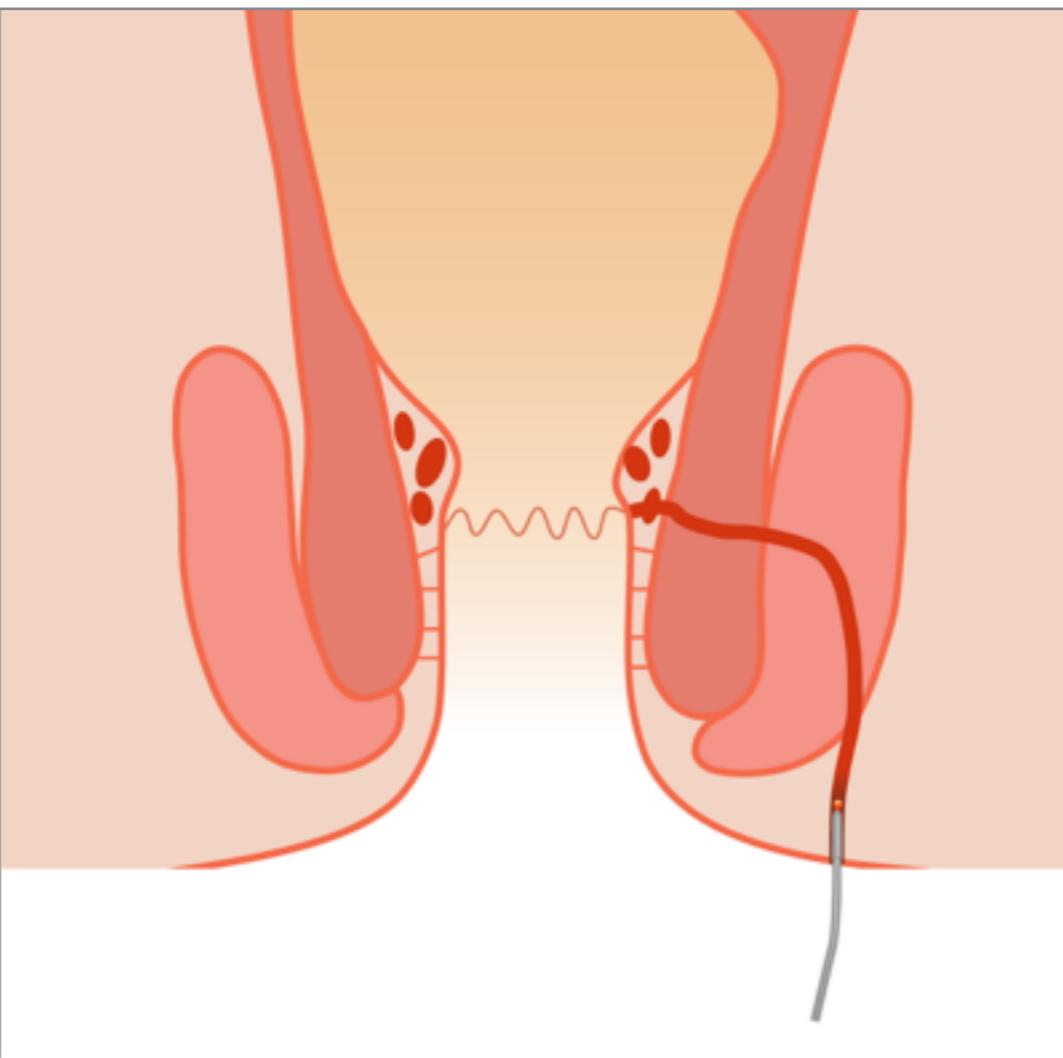


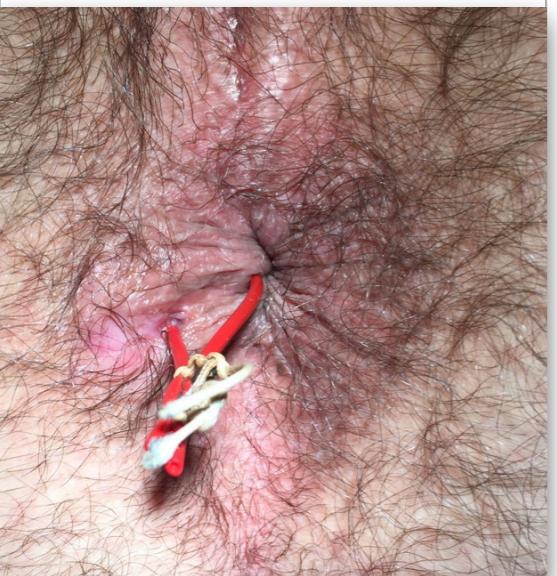
Anal Fistula



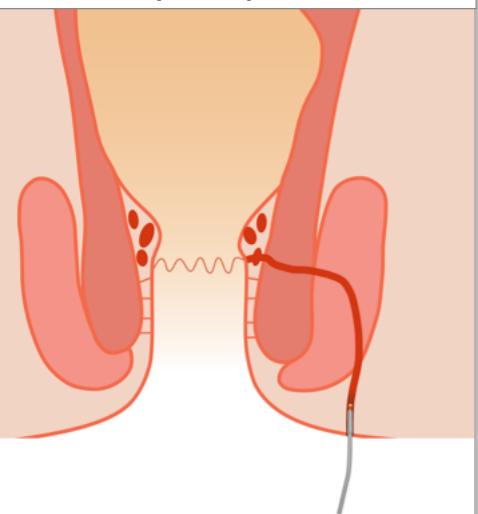


Laser Coagulation of Anal Fistula (LCAF)

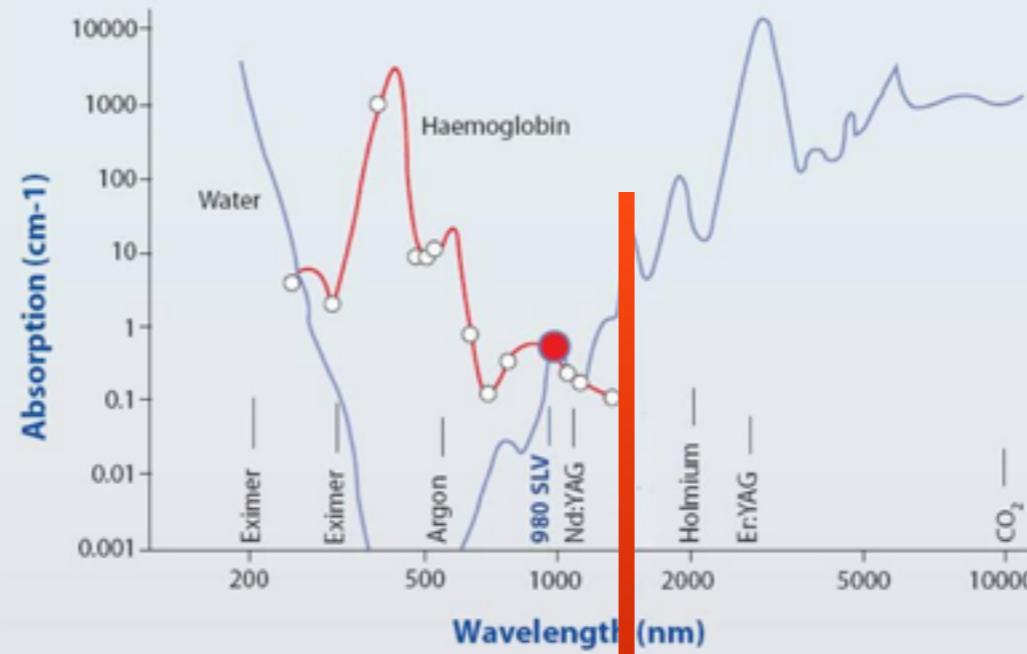




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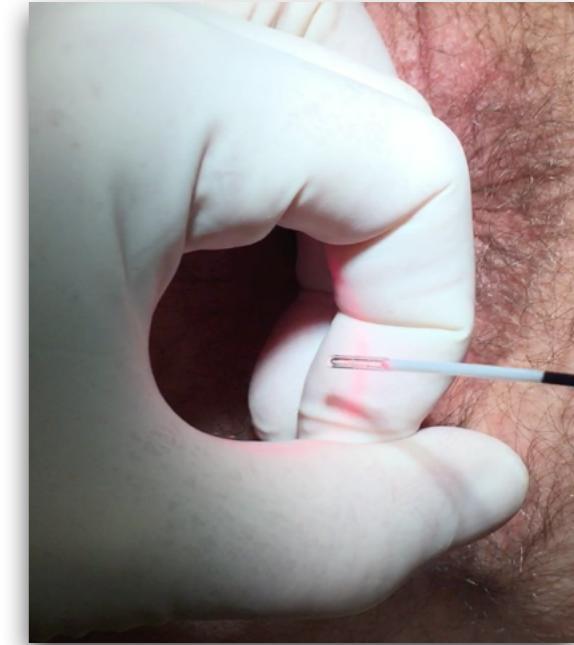


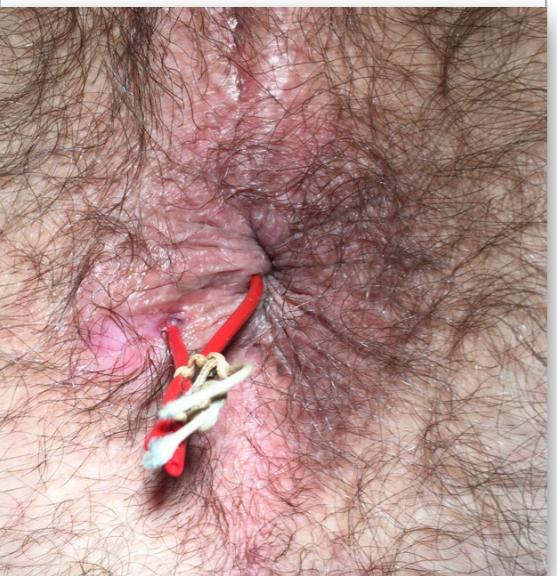
wavelength 1470 nm



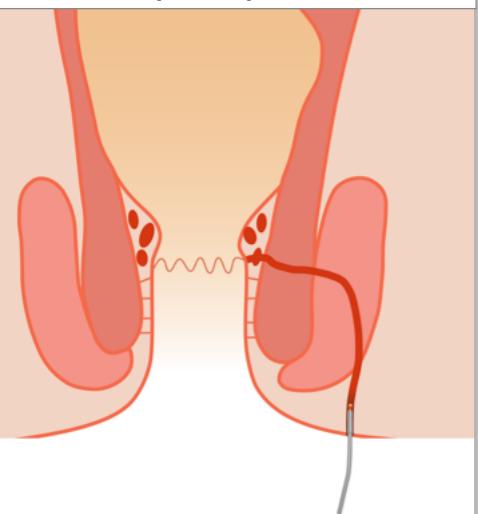
1470 nm

- good absorption in water (infected fistula tract wall)
- small penetration of about 2-3 mm deep (less damaging side effects)



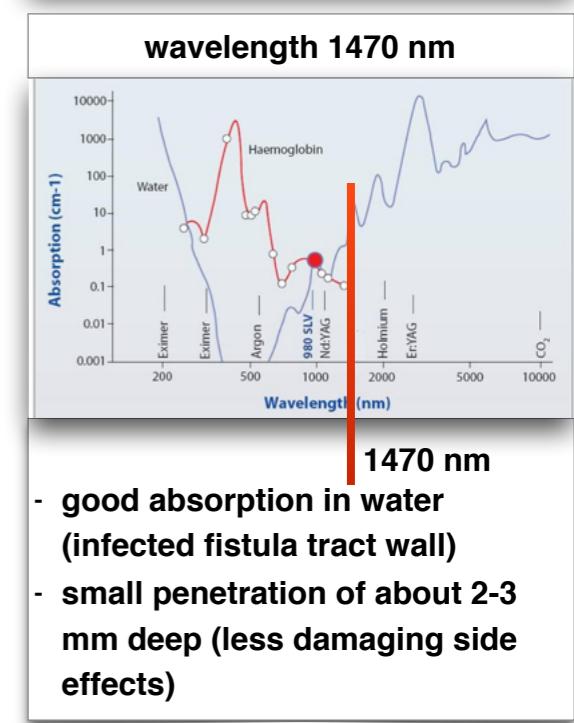
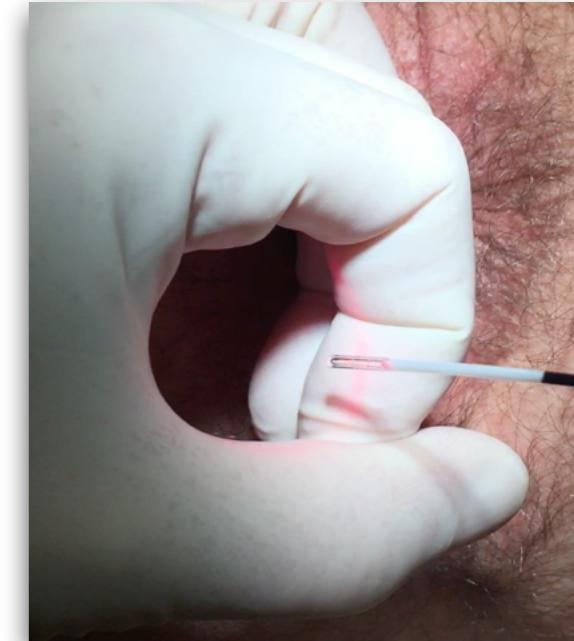


Laser Coagulation of Anal Fistula
(LCAF)



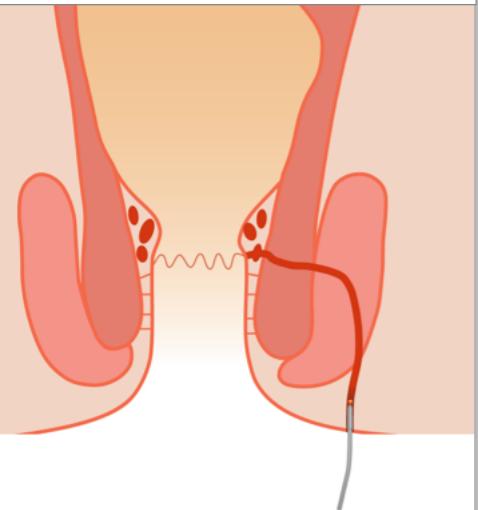
History of LCAF

- **Wilhelm (Germany) 2010**
- **called Fistula Laser Closure (FiLaC) (Biolitec AG)**
- **first step: flap on internal fistula opening**
- **second step laser coagulation**
- **primary healing rate 80% at beginning, now adjusted to 60%**



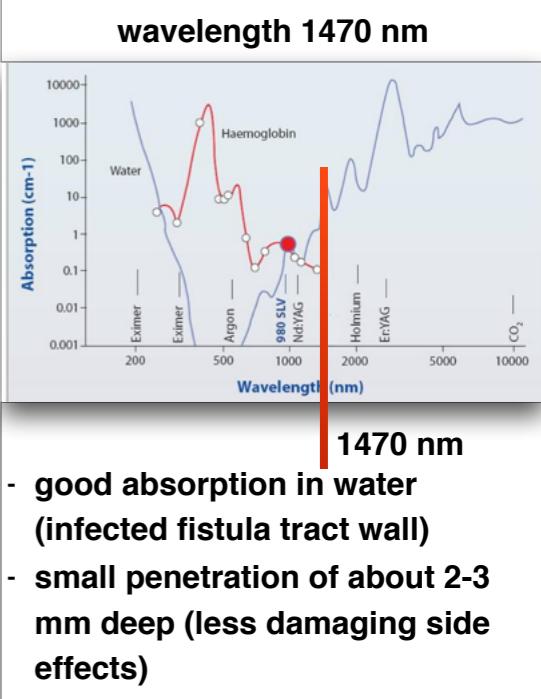
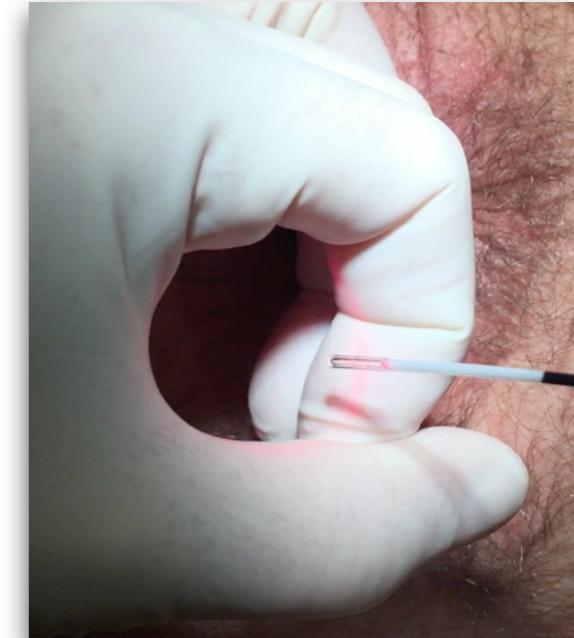


Laser Coagulation of Anal Fistula (LCAF)



Results of LCAF

- **80 cases since 2012 (63)**
- **57% primary healing rate after 5,6 weeks (7 month longest!)**
- **64% after second LCAF**
- **14% fistula distalisation - surgery**
- **81% overall healing rate**
- **first 39 cases with flap, following 14 cases without flap, 51% vs. 71% !!**



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External Hemorrhoids And Prolapse



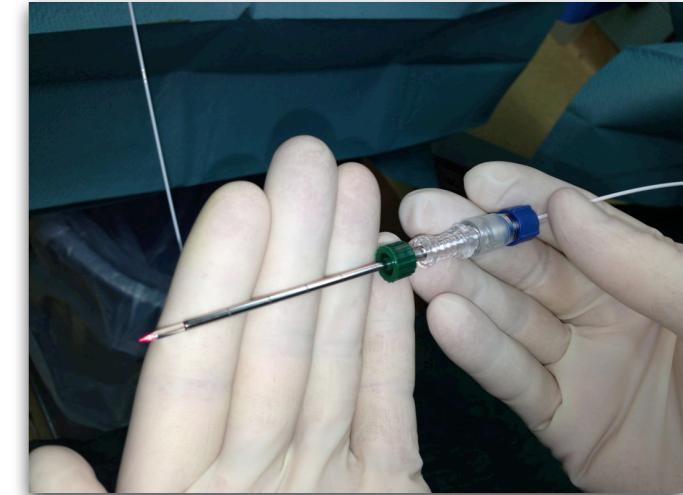
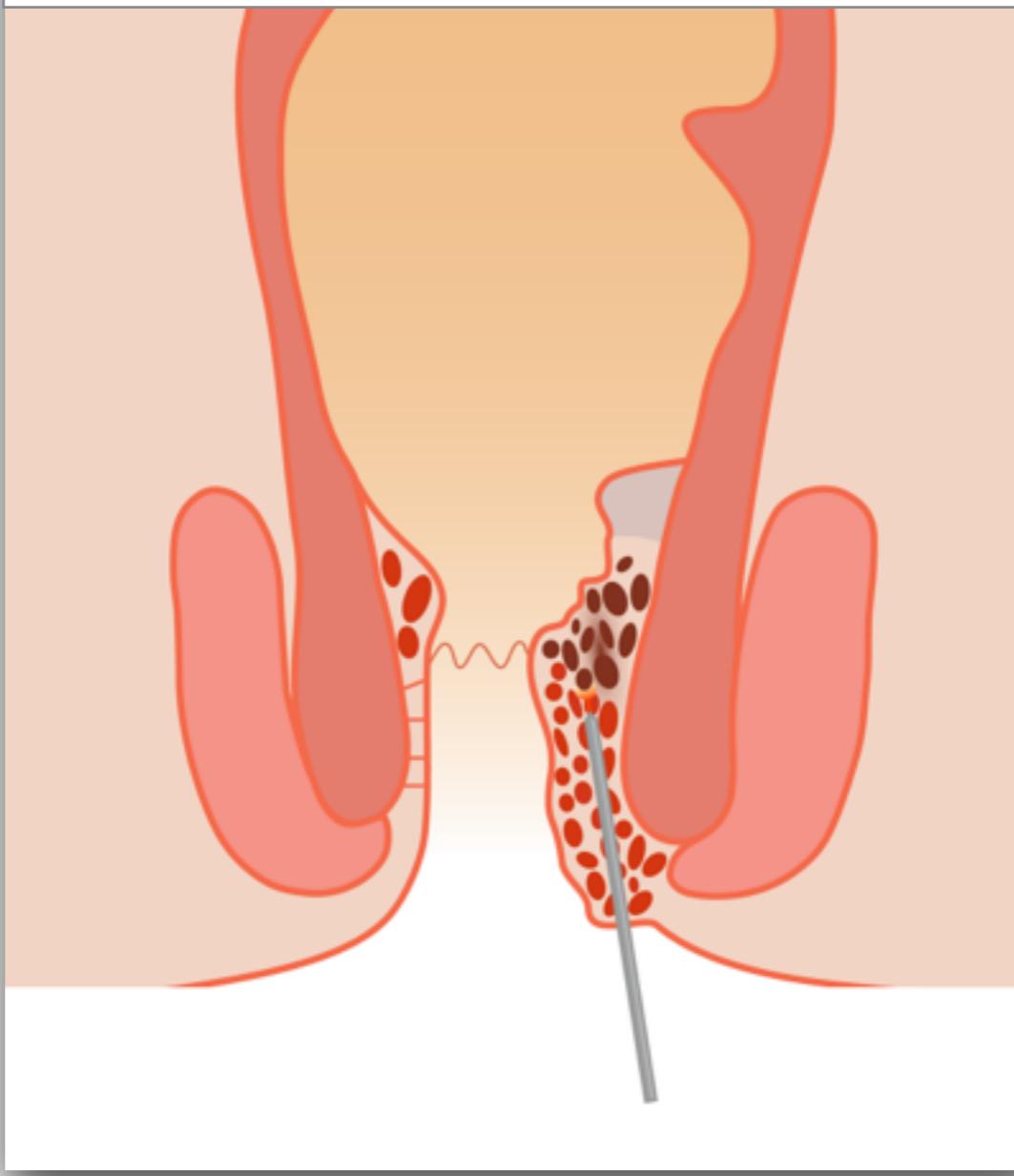
**External Hemorrhoids
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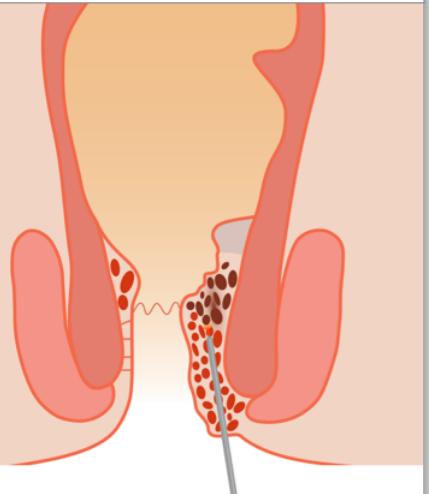


Laser Sclerotherapy of Hemorrhoids (LSH)

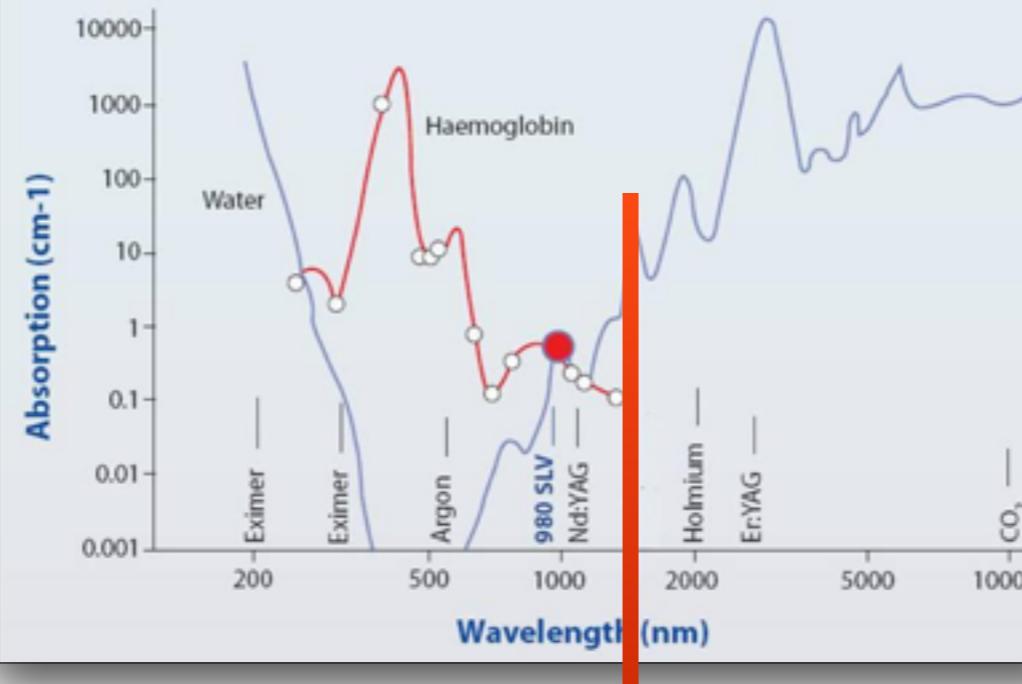




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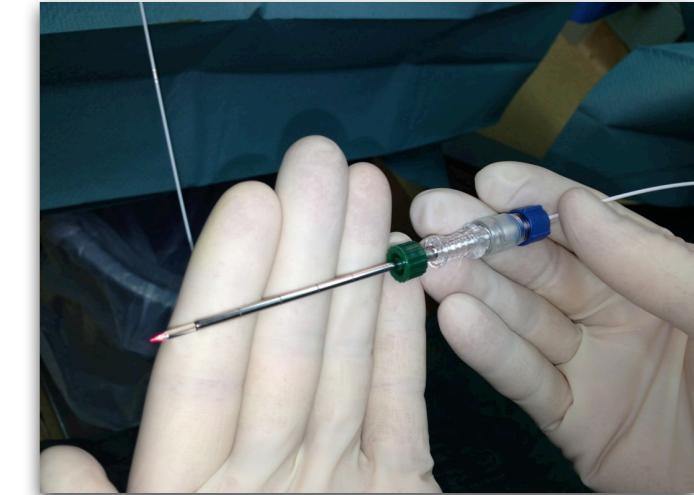


wavelength 1470 nm



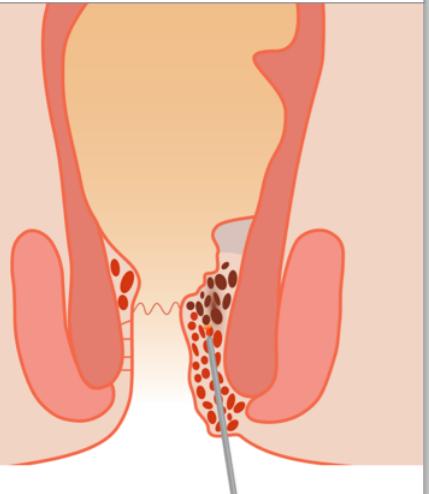
1470 nm

- good absorption in water (vessel wall)
- small penetration of about 2-3 mm deep (less damaging side effects)



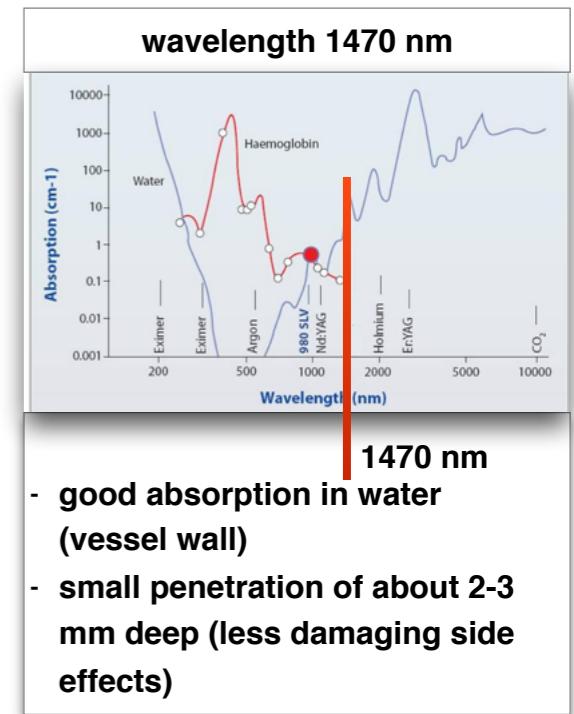
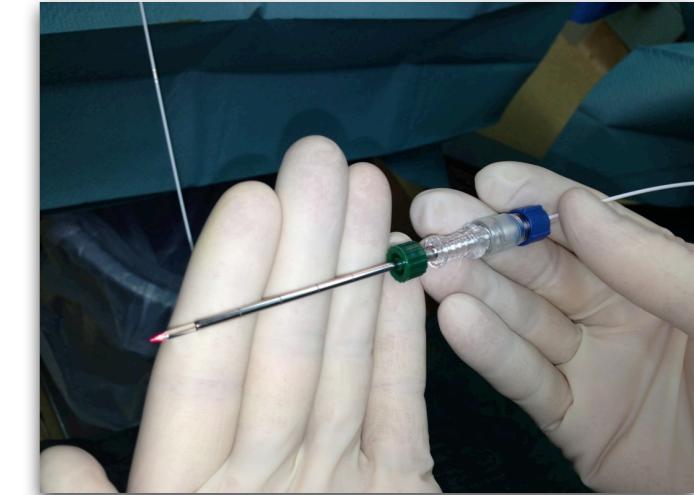


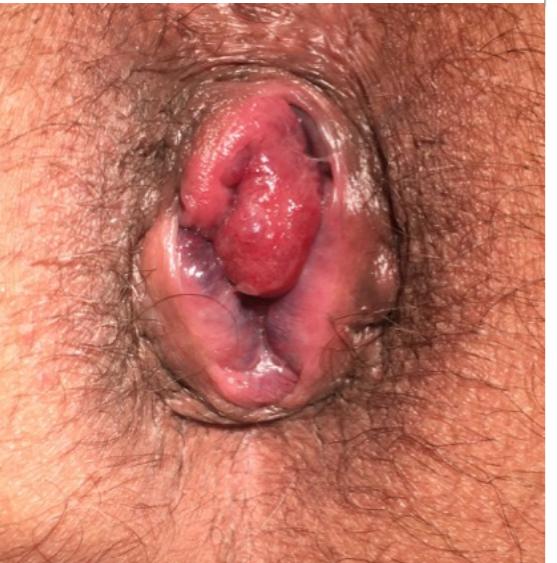
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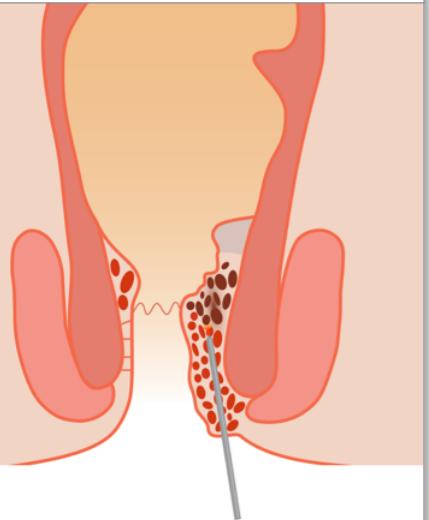
History of LSH

- Karahaliloglu (Turkey) 2010
- Laser Hemorrhoidoplasty (LHP)
(Biolitec AG)
- adapted from endovascular laser treatment of varicosis
- initially used a 360°-probe
- great variability in protocols (power of 6 - 8 - 10 Watts)
(with or without RAR suture)
- goal: shrink hemorrhoids not burn



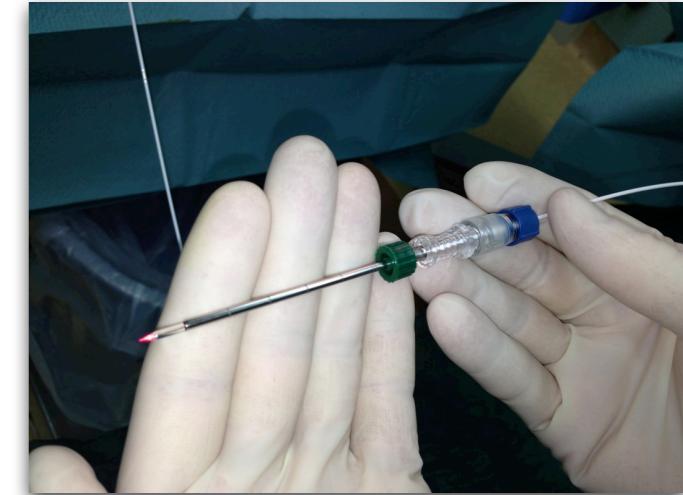


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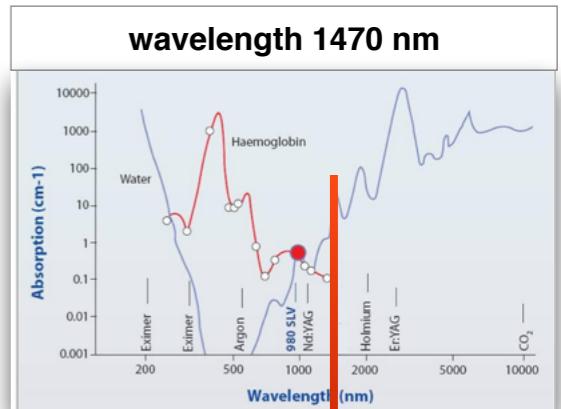


Results of LSH

- **251 cases since 2011 (221)**
- **bleeding 1%**
- **anal fistula 3%**
- **41% need further treatment:**
 - 6% fibromas**
 - 8% conservative treatment**
 - 10% sclerotherapy (injection)**
 - 10% rubber band ligation**
 - 5% surgery (LSH, LCH, Longo, Milligan-Morgan)**
- **best effect against bleeding**
- **good effect against prolapse when simultaneously RAR suture (44% of cases)**



wavelength 1470 nm



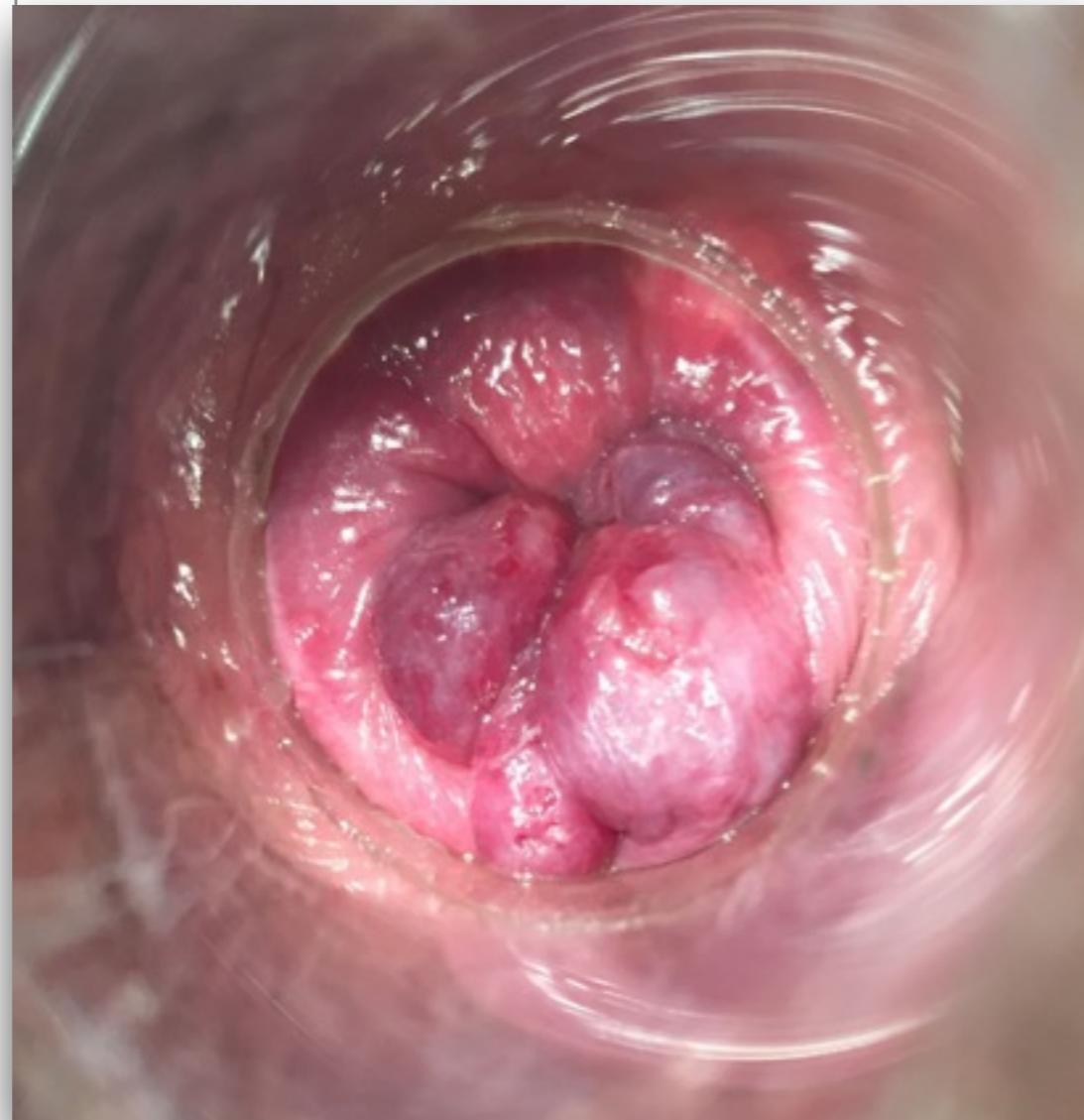
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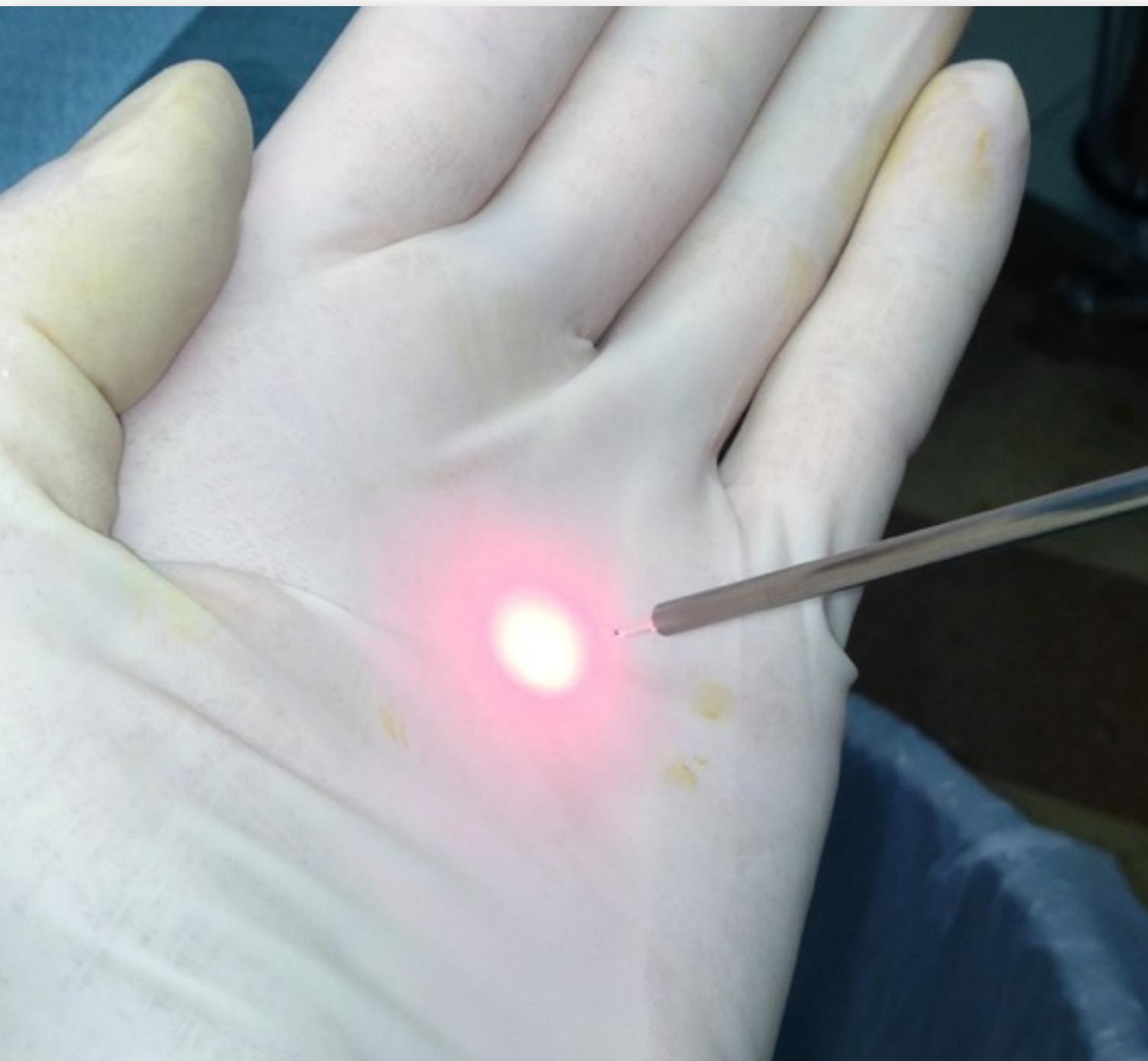
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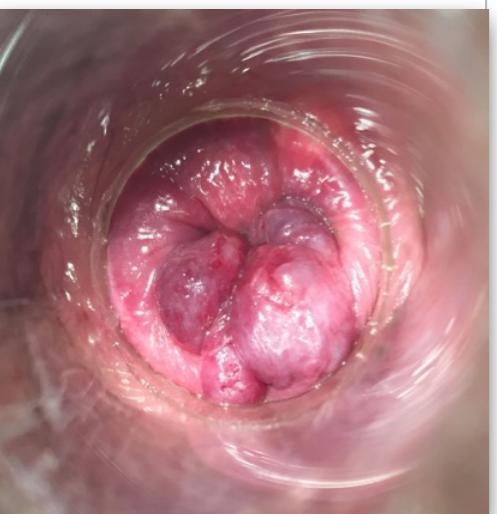
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Internal Hemorrhoids

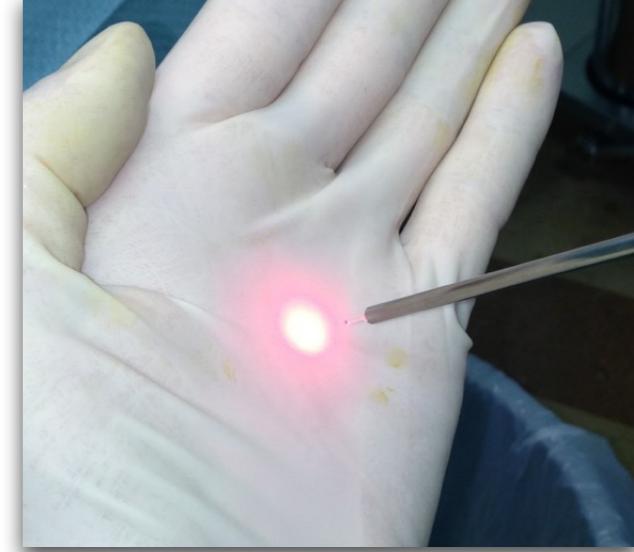
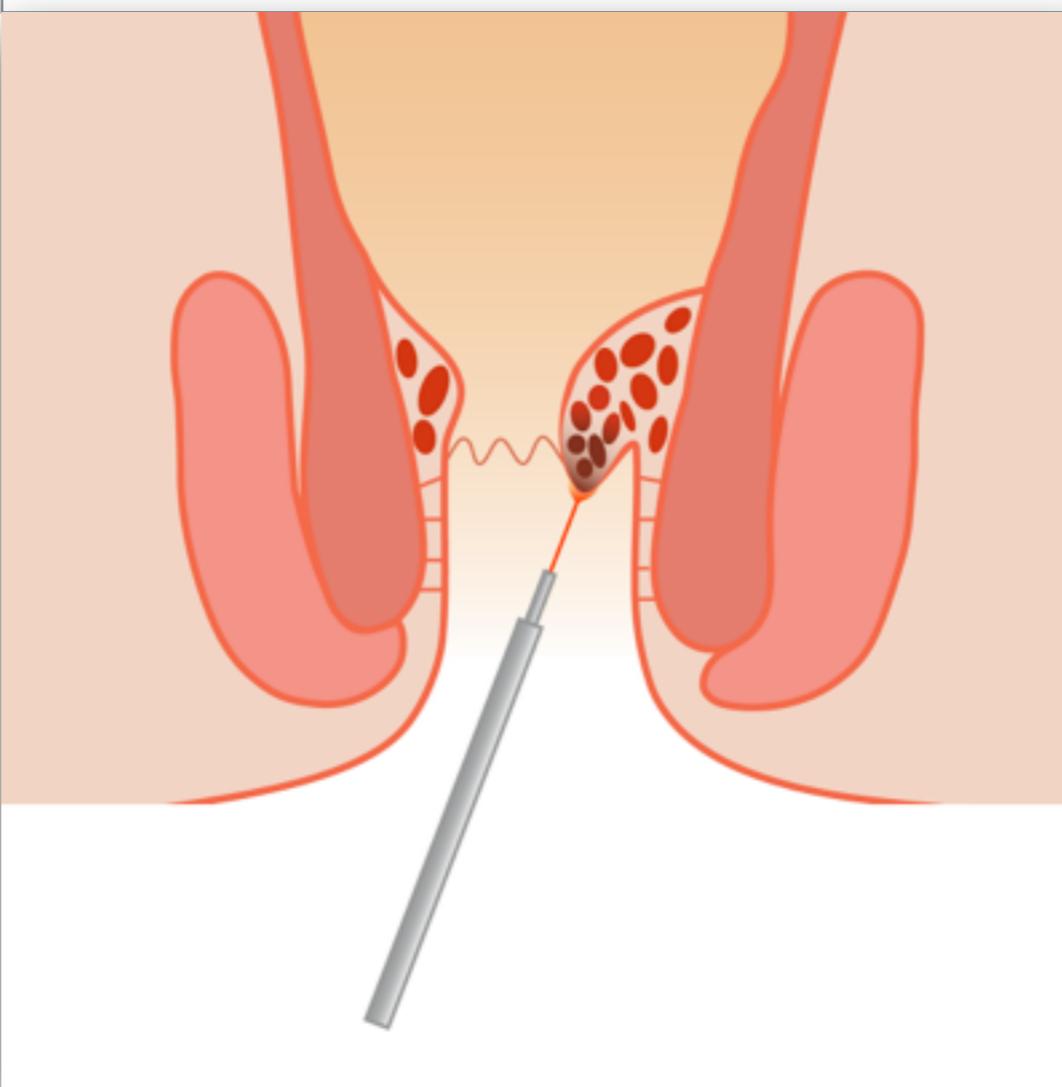


Internal Hemorrhoids



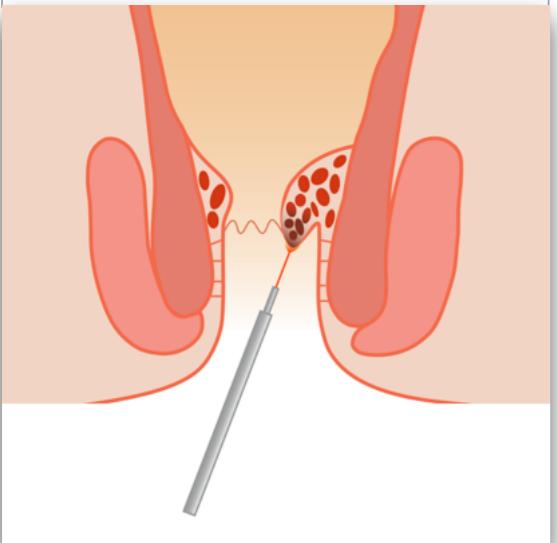


Laser Coagulation of Hemorrhoids (LCH)

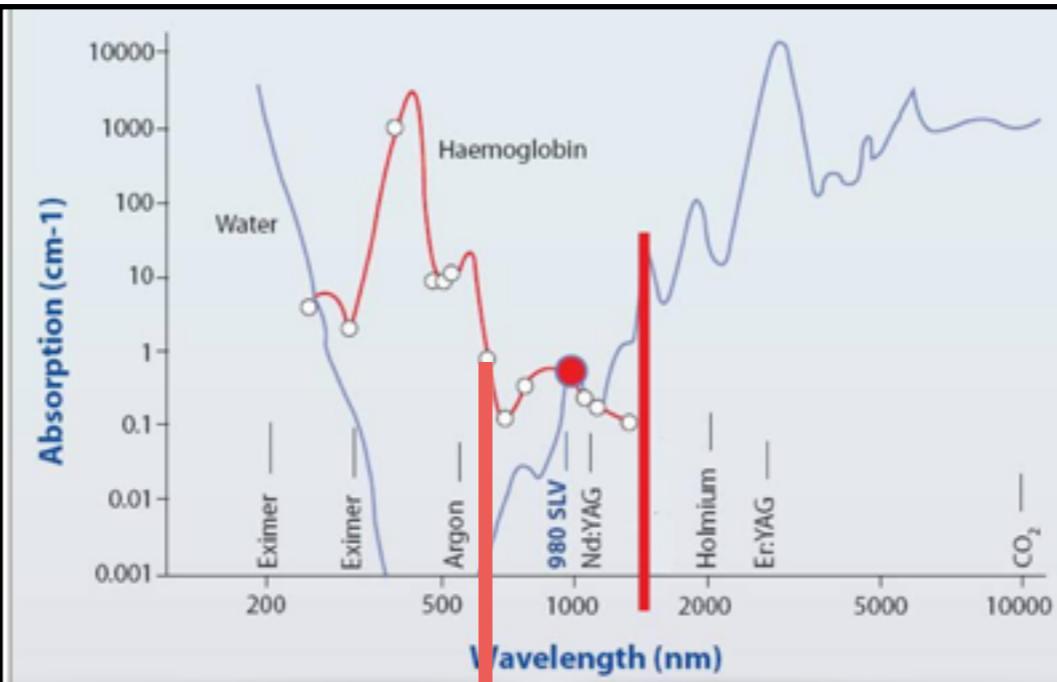




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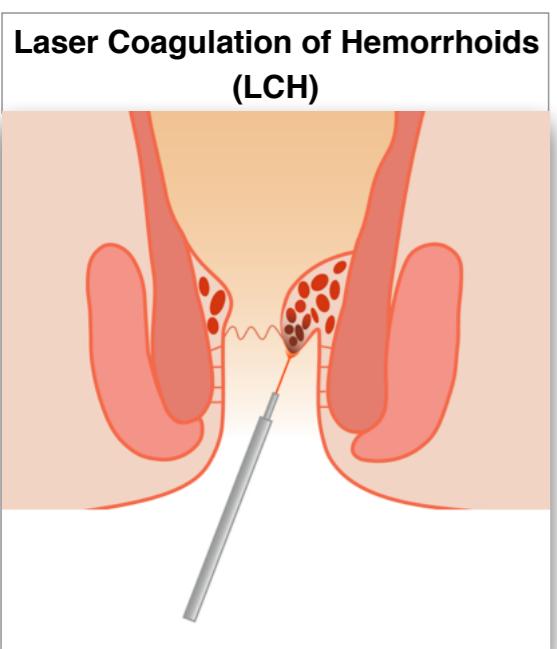
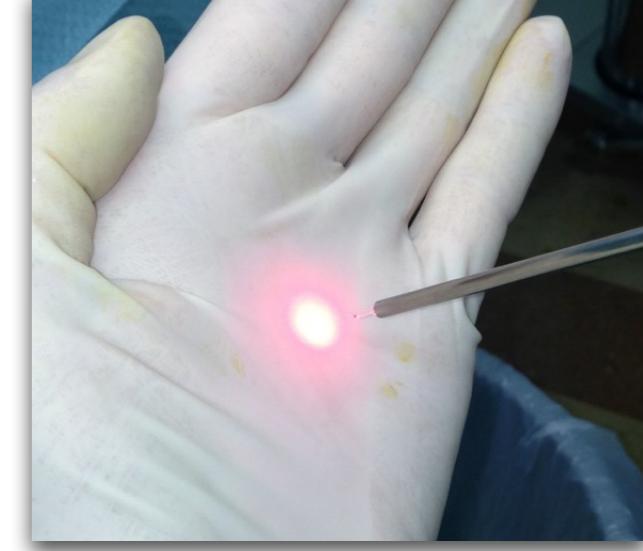
wavelength 810 nm or 980 nm



810 nm

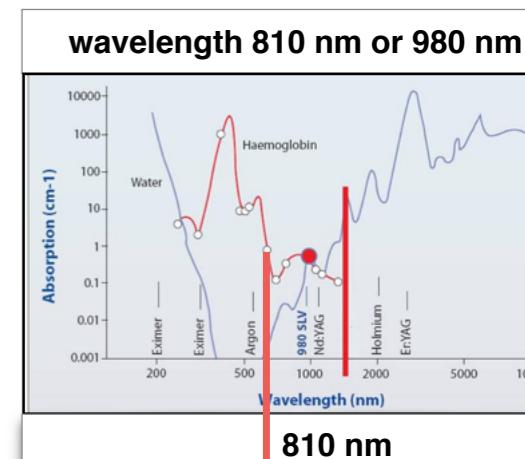
- good penetration in deeper layers
- good absorption in blood
- less side effects like necrosis



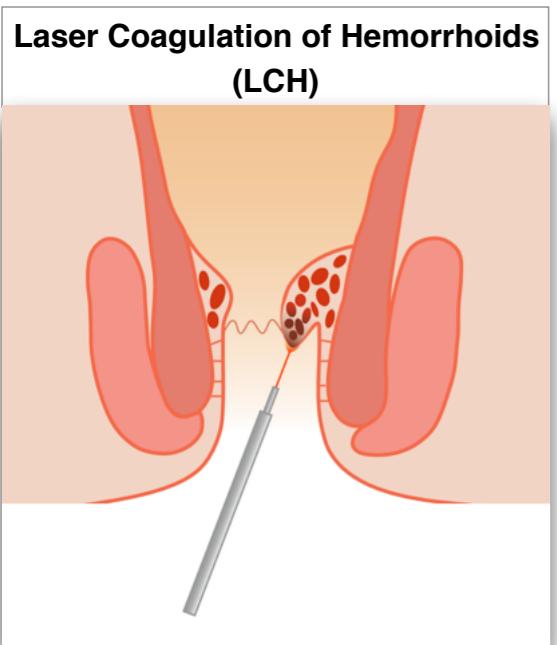
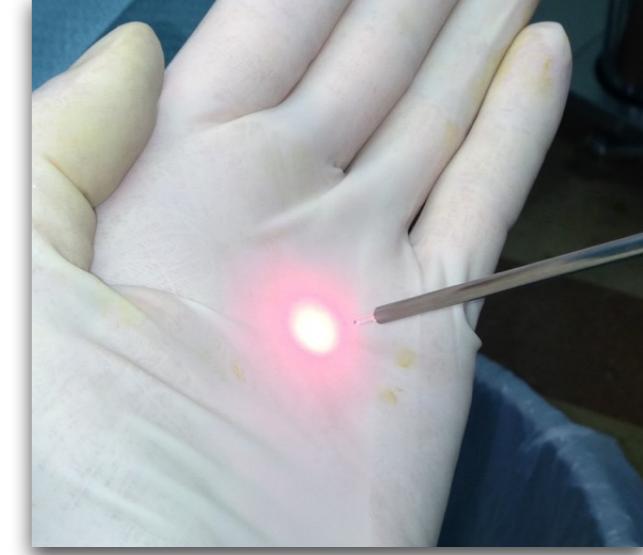


History of LCH

- **Giamundo (Italy) 2011 use 980 nm and doppler guided coagulation**
- **called Hemorrhoidal Laser Procedure (HeLP) (Biolitec AG)**
- **blood supply of hemorrhoidal cushions aimed**
- **but THD-Trial showed no difference between Rectoanal Repair Sutures with or without doppler guided**
- **LCH uses 810 nm, no doppler**

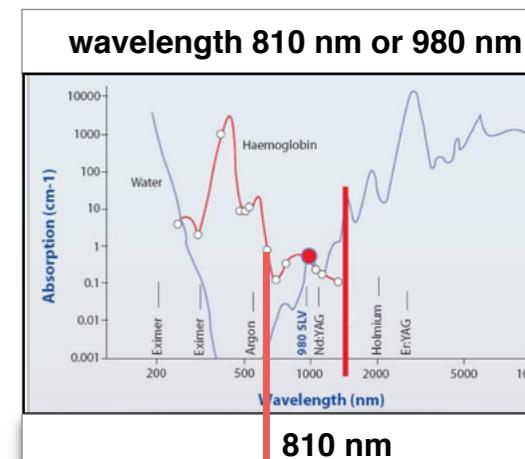


- good penetration in deeper layers
- good absorption in blood
- less side effects like necrosis



Results of LCH

- **102 cases since 2013 (76)**
- **bleeding 4%**
- **stricture 1%**
- **serious pain 3%**
- **intraop suture 22%**
- **37% need further treatment**
- **54% LCH simultaneous with other surgery, e.g. fissure for patients convenience - 42% vs. 31%**



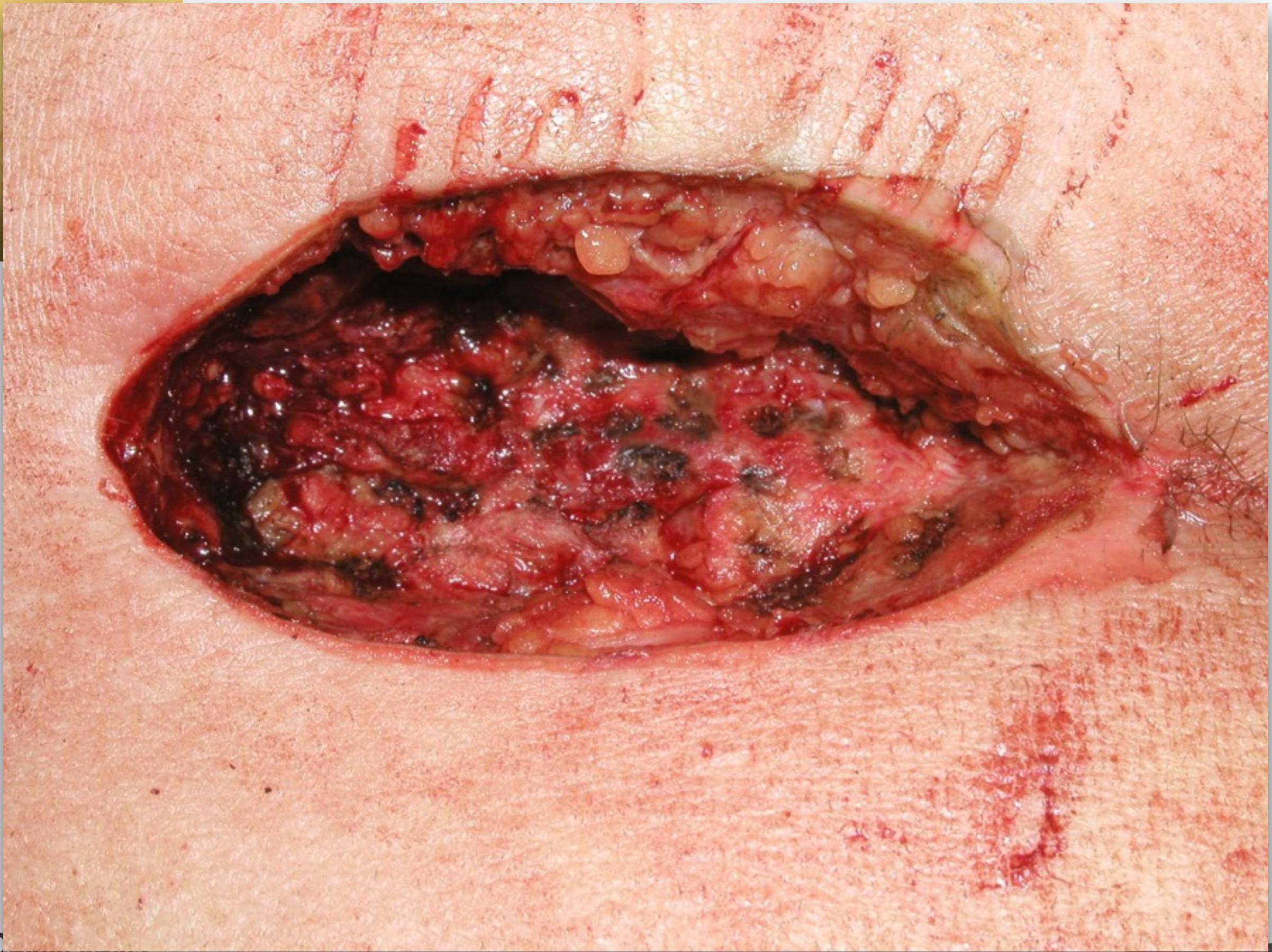
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Pilonidal Sinus



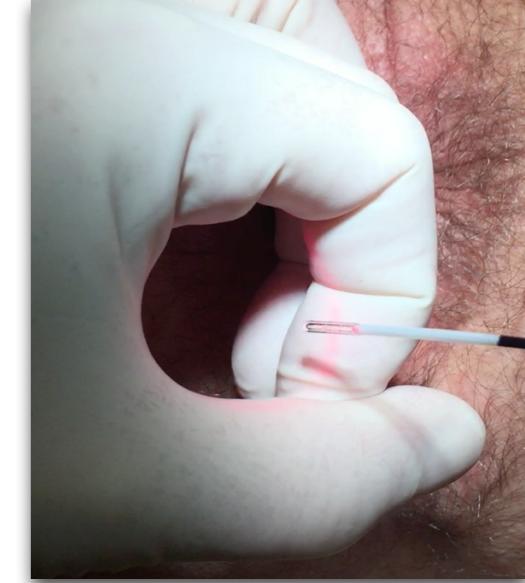
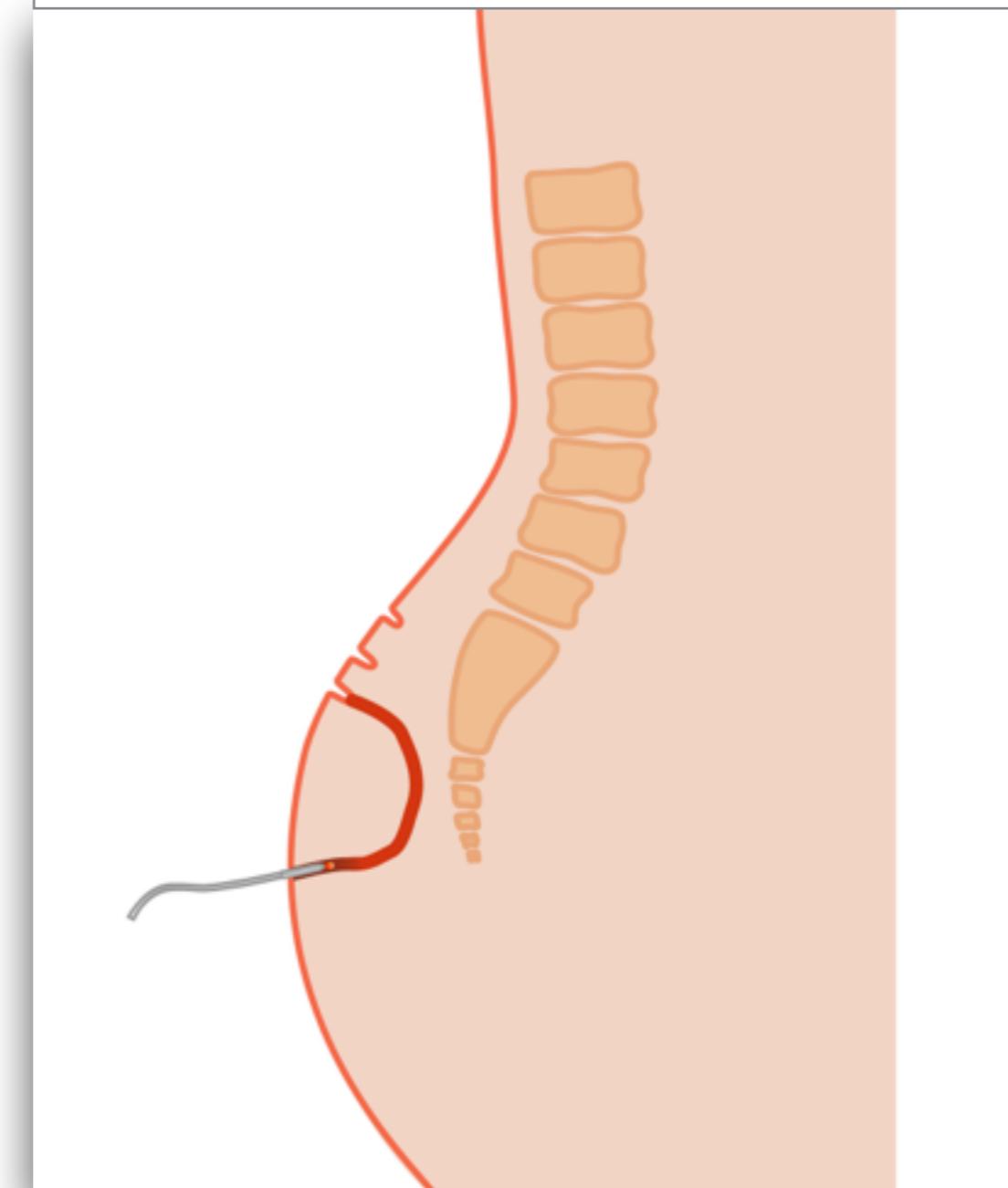


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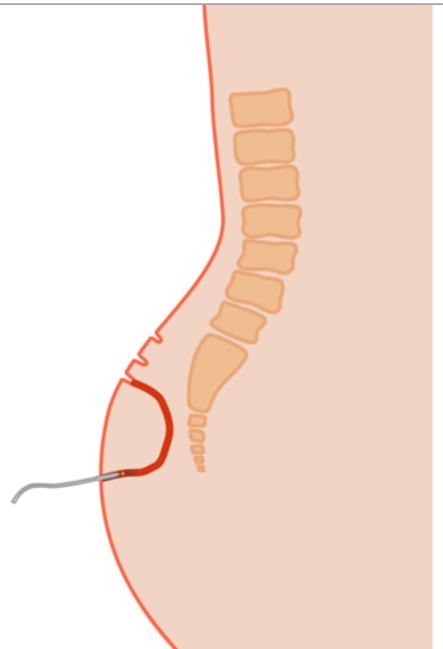


Laser Coagulation of Pilonidal Sinus (LCP)

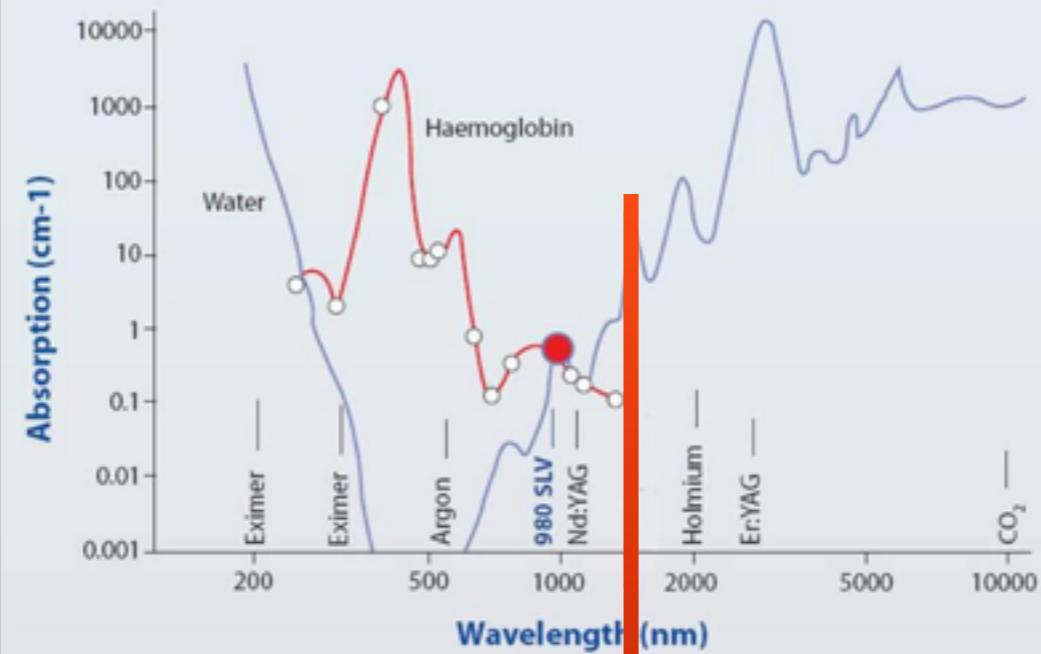




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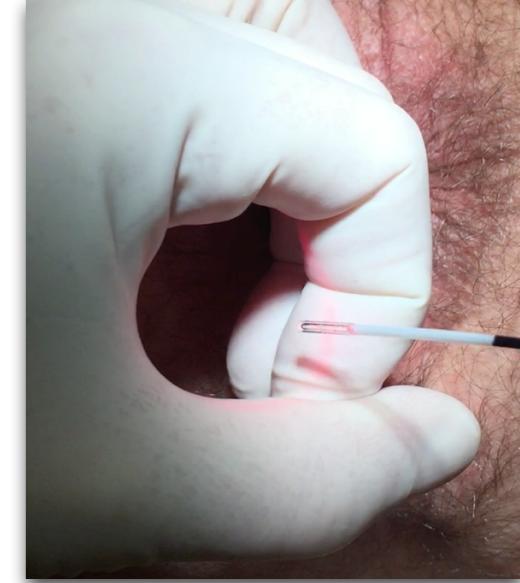


wavelength 1470 nm



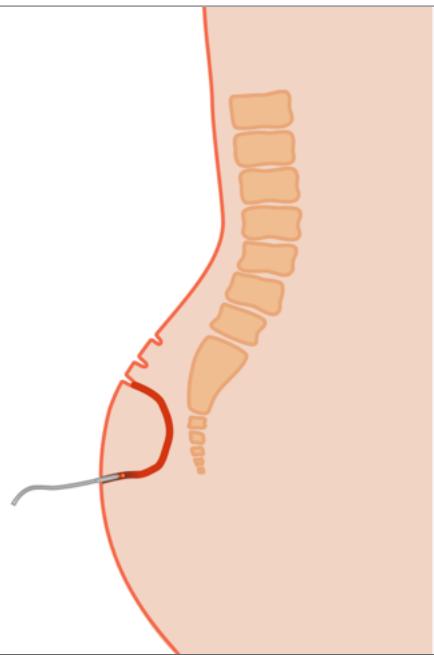
1470 nm

- **good absorption in water (infected fistula tract wall)**
- **small penetration of about 2-3 mm deep (less damaging side effects)**



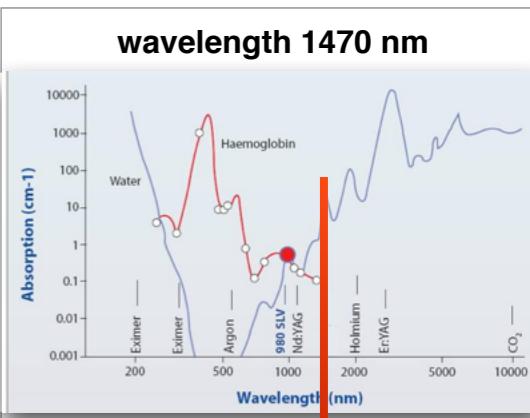
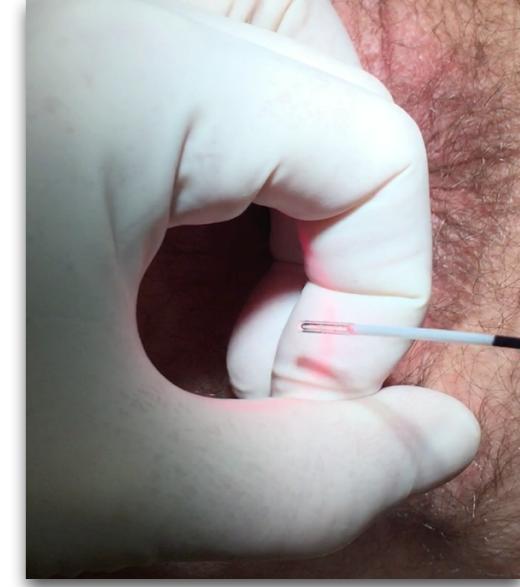


Laser Coagulation of Pilonidal Sinus (LCP)



History of LCP

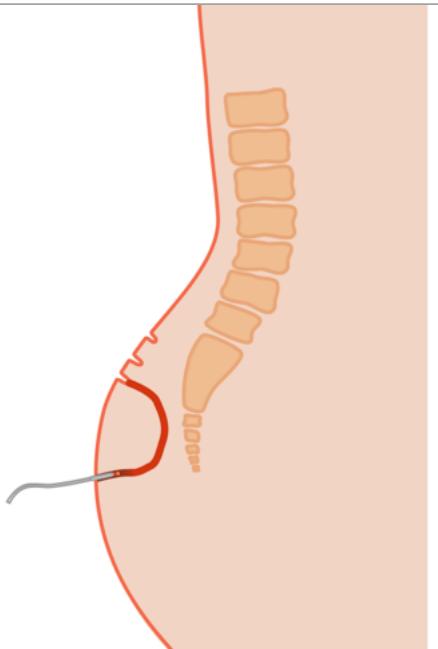
- **Wilhelm (Germany) 2013 and other at same time**
- **adapted from treatment of anal fistula**
- **patients demand because of:**
- **very long time out of business**
- **recurrence in classic surgery**
- **strong need for minimal invasive methods**



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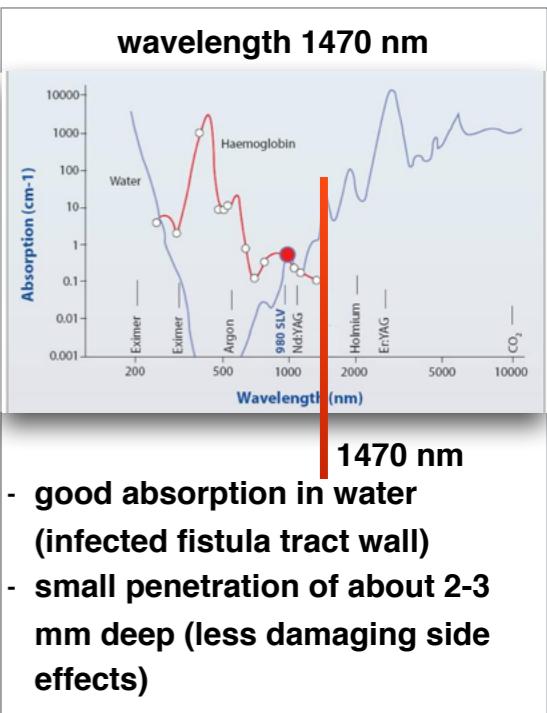
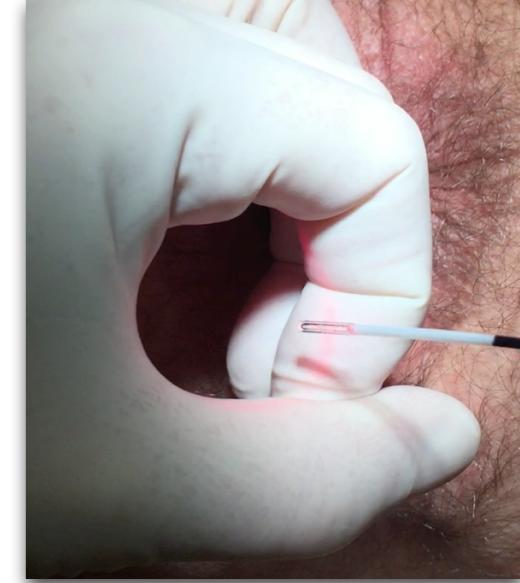


Laser Coagulation of Pilonidal Sinus (LCP)



Results of LCP

- **50 cases since 2012 (41)**
- **59% primary healing rate after 6 weeks (3 month longest!)**
- **81% forced wound management included (debridement etc)**
- **17% recurrence**
- **repeating is no problem**



History of LCP

- Wilhelm (Germany) 2013 and other at same time
- adapted from treatment of anal fistula
- patients demand because of:
- very long time out of business
- recurrence in classic surgery
- strong need for minimal invasive methods

now you know the differences



thank you for your attention