

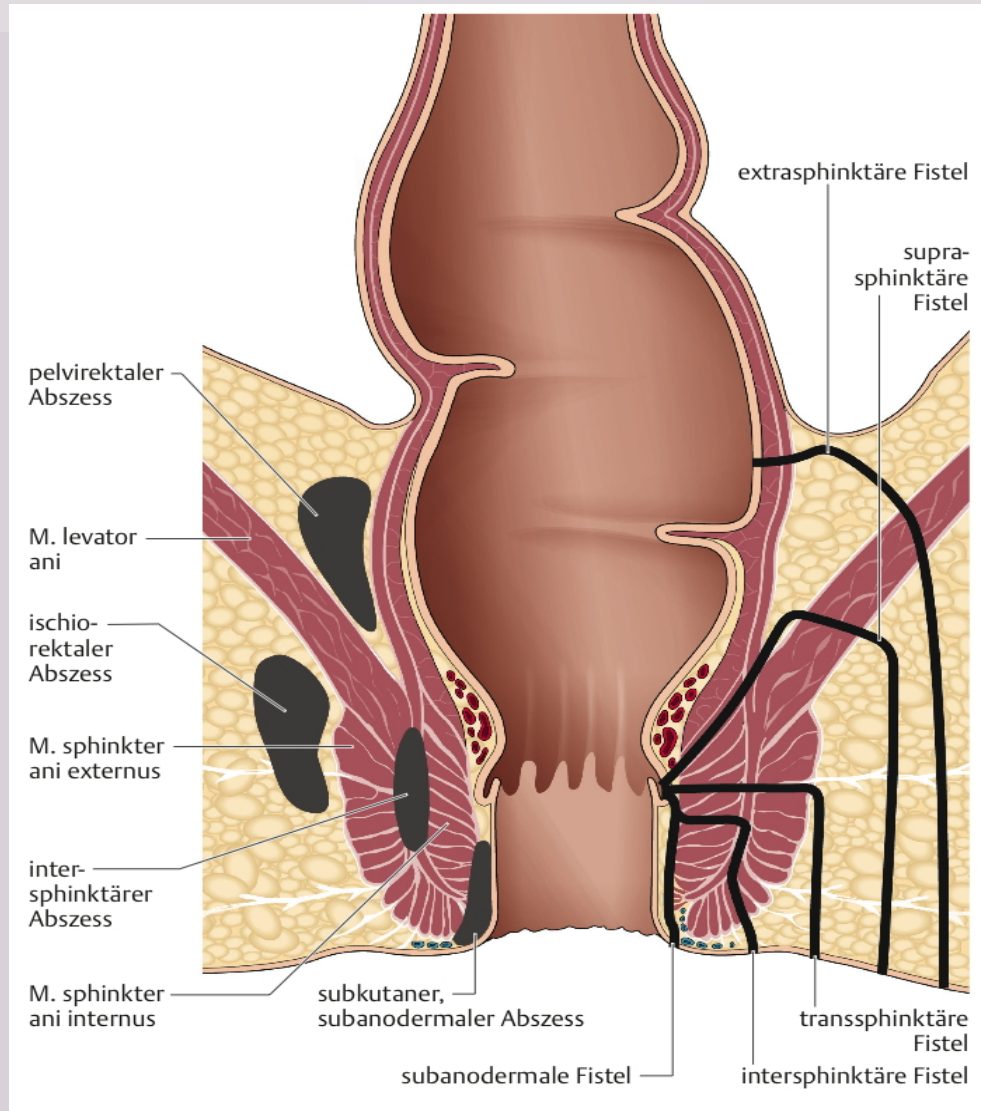
Fistulotomie mit/ohne Sphinkterrekonstruktion

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Klassifikation von Analfisteln (1)

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Fistelspaltung

- Fistulotomie / lay open
- Fistulotomie mit Abszess Drainage
- Fistulotomie mit Marsupialisation
- Fistulektomie
- Schneidender Faden



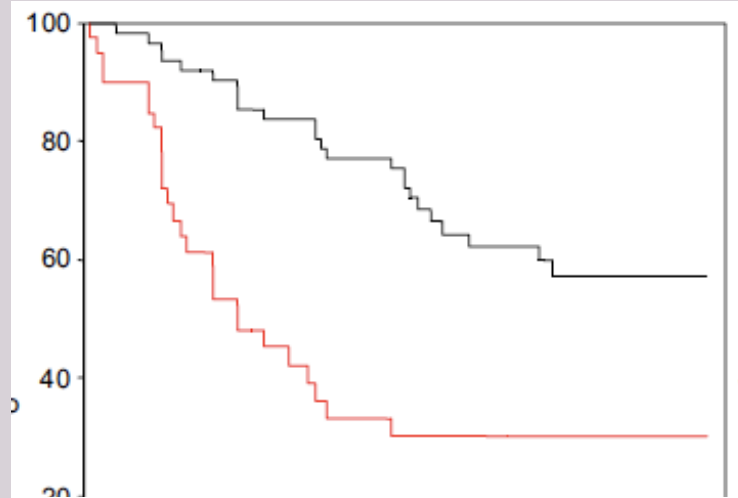
Fistulotomie / Fistulektomie

Autor	Jahr	n	Heilung (%)	Rezidiv (%)	Inkont. (%)	FU (Mo.)
Stelzner	1956	73	100	-	10	60-120
Akvobianz	1968	40	100	-	20	24-48
Riedler	1978	107	74	-	21	-
Saino	1985	199	89	-	34	7-108
Shouler	1986	96	94	0	0	2,5 (1-50)
Kennedy	1990	32	78	-	1°: 44, 2°: 3	36 (13-36)
Sangwan	1994	461	-	6,5	7	34
Van Tets	1994	312	100	6	6	12
G.-Aguilar	1996	108	92	-	45	29
Perez	2006	28	100	7,1		36 (24-52)
Vd Hagen	2006	62	98	7	5	12 - 72
Van Koperen	2008	109	-	7	40	76 (7-134)
Ortiz	2008	115	-	2	6	42

Fistulotomie / Fistulektomie

Author	Year	n	Healing (%)	Recurrence (%)	Follow-up (Mo.)
Stelzner	1956	73	100	-	60-120
Akvobianz	1968	40	100	-	24-48
Parks	1976	9 6	78 50	-	>12
Saino	1985	199	89	-	7-108
Shouler	1986	96	94	0	2,5 (1-50)
Kennedy	1990	32	78	-	36 (13-36)
Sangwan	1994	461	-	6,5	34
Van Tets	1994	312	100	6	12
Garcia-Aguilar	1996	108	92	-	29
Cavanaugh	2002	93	100	-	<24 - >60
Perez	2006	28	100	7,1	36 (24-52)
Van der Hagen	2006	62	98	7 16 26 39	12 24 48 72
Van Koperen	2008	109	-	7	76 (7-134)
Ortiz	2008	115	-	2	42

Fistulektomie (Follow Up 6 Jahre)



Rezidiv nach
Fistulektomie

Table 2 Patient outcome

	Failure of treatment [n (%)]	Cumulative recurrence after 12 months [n (%)]	Cumulative recurrence after 24 months [n (%)]	Cumulative recurrence after 48 months [n (%)]	Cumulative recurrence after 72 months [n (%)]
MF (N=41)	5 (12)	9 (22)	18 (44)	26 (63)	26 (63)
FT (N=62)	1 (2)	4 (7)	10 (16)	16 (26)	24 (39)

Cutting Seton

Author	Year	n	Healing (%)	Incont (%)	FU (mo.)
Deshpande	1976	48	96	k.A.	12-96
Misra	1988	59	96	0	22 (11-37)
Williams	1991	13	100	minor: 54 maior: 7	24 (4-60)
Van Tets	1994	312	n.d.	II: 50 IV: 57	-
García Olmo	1994	12	100	25	6-24
Walfisch	1997	23	100	0	24
Hämäläinen	1997	35	94	63	70 (28-184)
Dziki	1998	33	100	minor: 34 maior: 38	16 (4-22)
Mentes	2004	20	100	20	12 (6-24)
Pescatori	2004	17	94,7	minor: 6 maior: 12	22 (5-89)
Hammond	2006	29	52	34	42
Vatansev	2007	32	100	16	26
Roig	2009	30	83,3	k.A.	19 ± 25

Inkontinenz nach „Cutting Seton - Fistulotomie“

38 Studien, 3 RCTs, PubMed + Medline,

Reference	Country	Type of seton	Level of evidence	Incontinence*
Charúa-Guindic <i>et al.</i> [34]	Mexico	Silastic	II-3	8/50
Christensen <i>et al.</i> [35]	Denmark	N/A	II-3	13/21
Cox <i>et al.</i> [36]				4/8
Culp [26]				3/20
Decanini-Terán <i>et al.</i>				0/42
Deshpande <i>et al.</i> [37]				0/397
Durgan <i>et al.</i> [38]				2/10
Dziki and Bartos [39]				12/32†
Fasth <i>et al.</i> [40]				0/7
Flich Carbonell <i>et al.</i>				3/19
García-Aguilar <i>et al.</i>				8/12
Gonzalez-Ruiz <i>et al.</i>				0/31
Graf <i>et al.</i> [44]				15/29
Gurer <i>et al.</i> [25]				0/17
Hämäläinen and Sainio				22/35
Hamel <i>et al.</i> [46]				0/12
Hammond <i>et al.</i> [47]				4/16
Hasegawa <i>et al.</i> [48]	UK	Various‡	II-3	15/28
Held <i>et al.</i> [49]	USA	Rubber band	II-3	0/9
Ho <i>et al.</i> [20]				3/46†
Isbister and Al Sane				17/47†
Joy and Williams [50]				5/10
Malouf <i>et al.</i> [52]				1/3
McCourtney and Fitch				3/16
Mentes <i>et al.</i> [54]				4/20
Misra and Kapur [55]				0/53
Mohite <i>et al.</i> [31]				0/114
Pescatori <i>et al.</i> [56]				3/17
Qureshi <i>et al.</i> [57]				2/4
Shukla <i>et al.</i> [21]				8/155
Tahir [58]				5/9
Theerapol <i>et al.</i> [59]	Singapore	Prolene O	III	0/41
Tochi <i>et al.</i> [60]	Italy	N/A	III	4/28
Vatansev <i>et al.</i> [61]	Turkey	Cable tie	II-3	5/32
Walfisch <i>et al.</i> [62]	Israel	No. 0 heavy silk	III	0/23
Williams <i>et al.</i> [63]	USA	No. 1 silk	II-3	8/13
Zbar <i>et al.</i> [22]	Barbados, Israel, Italy	0-Nylon	I	3/34
Average incontinence rate				12.3%

Inkontinenz Rate:

- Gesamt: 12%
- transsphinkter: 31%
- suprasphinkter: 53%
- Luft (1°) 46%
- flüssig (2°) 70%
- fest (3°) 18%

Fistulektomie für hohe Analfisteln ?

Tech Coloproctol (2011) 15:143–150
DOI 10.1007/s10151-011-0676-6

ORIGINAL ARTICLE

For many high anal fistulas, lay open is still a good option

G. K. Atkin · J. Martins · P. Tozer ·
P. Ranchod · R. K. S. Phillips

Table 2 Initial procedure performed in 84 patients with high fistulas

Procedure	Number of patients
Examination under anaesthesia	1
Fistulotomy with marsupialisation	37
Fistulotomy without marsupialisation	0
Insertion of cutting seton	3
Insertion of loose seton	34
Insertion of fibrin glue	1
House advancement flap	1
Mucosal advancement flap	2
Transperineal core-out and repair	6
Martius flap	1

Fistulektomie für hohe Analfisteln ?

Heilungsrate mit Fistulektomie: low 98%, high 97%

Table 3 Overall final continence status for all patients, including those operated on previously elsewhere or arriving with a stoma (continence status not documented if denominator is less than *n*, where *n* equals total number for group)

Documented postoperative status	Overall (<i>n</i> = 158)	Low (<i>n</i> = 52)	High (<i>n</i> = 84)	<i>P</i> -value
Fully continent	99/156 (63%)	34/52 (65%)	50/83 (60%)	0.588
Flatus incontinence	44/156 (28%)	16/50 (32%)	24/83 (29%)	0.702
Mucus incontinence	15/145 (10%)	6/48 (13%)	8/78 (10%)	0.773
Soft stool incontinence	10/156 (6%)	3/52 (6%)	6/83 (7%)	1.000
Hard stool incontinence	4/156 (3%)	1/52 (2%)	3/83 (4%)	1.000
Needing sanitary pads	17/156 (11%)	4/52 (8%)	13/83 (16%)	0.196

Table 4 Operation-induced incontinence rates following fistulotomy for low and high fistulas

	Low (<i>n</i> = 51)			High (<i>n</i> = 48)			<i>P</i> -value
	Fully continent preoperative	New incontinence postoperative	Operation-induced incontinence (%)	Fully continent preoperative	New incontinence postoperative	Operation-induced incontinence (%)	
Flatus	40	9	23	37	11	30	0.604
Soft stool	49	1	2	46	2	4	0.609
Hard stool	50	0	0	46	1	2	0.479
Use of pads	44	2	5	65	5	8	0.699

Fistulektomie für hohe Analfisteln ?

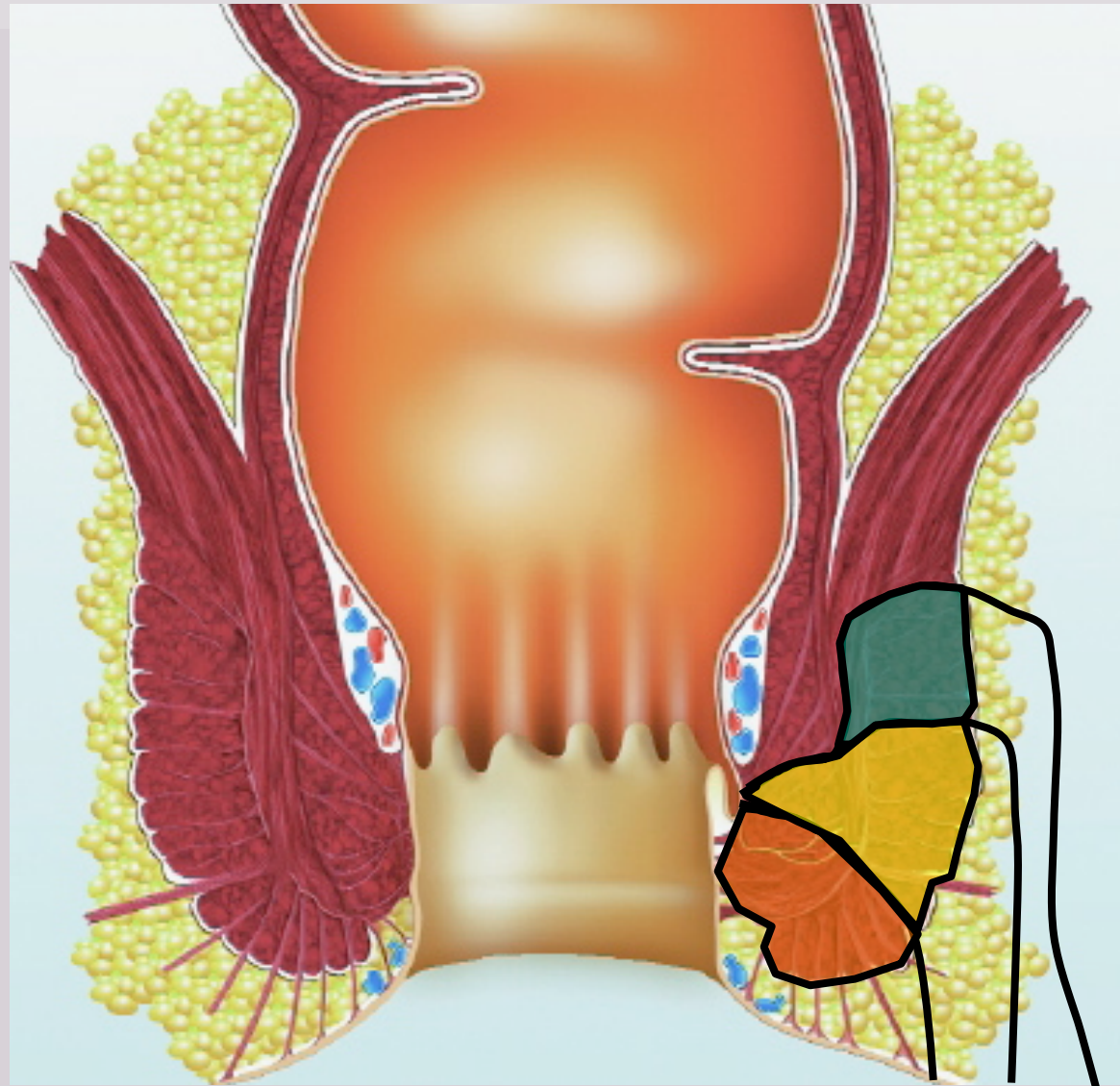
Operation-induced incontinence to	Intersphincteric (n = 37)	Trans-sphincteric (n = 58)	P-value
Flatus	7/31 (23%)	13/45 (29%)	0.604
Soft stool	1/35 (3%)	2/56 (4%)	1.000
Hard stool	0/36 (0%)	1/57 (2%)	1.000
Use of pads	1/32 (3%)	4/47 (9%)	0.643

.... aber Was ist hoch ? > 1 cm !

Operation-induced incontinence to/other	Fistulotomy (n = 48)	Seton insertion (n = 29)	P-value
Flatus	11/37 (30%)	1/24 (4%)	0.020
Soft stool	2/46 (4%)	0/28 (0%)	0.499
Hard stool	1/46 (2%)	0/29 (0%)	1.000
Use of pads	3/38 (8%)	7/23 (30%)	0.032

Conclusion: Low incontinence rate in experienced hands

Klassifikation von Analfisteln (2)



Op - Technik



EDZ - Ergebnisse

Gesamt:	148	
OP-Zeitraum:	06/2004 - 12/2007	
Männer/Frauen:	97/51	
Alter m/w:	43 Ja./ 50 Ja.	
M. Crohn:	14%	
Fistel-Vor-Op	22%	
Supra-/hoch transsphinkter:	16%	(proximales Sph-Drittel)
Intermed. transsphinkter:	40%	(mittleres Sph-Drittel)
Distal transsphinkter:	44%	(distales Sph-Drittel)

Klinischer Verlauf

n = 148, 06/2004 – 12/2007, Follow up: 20 Mo (12 – 48 Mo)

Gesamt: n = 148

Primäre Heilung: n = 126 (85,2%)

Rezidiv: n = 22 (14,8%)

Dehiszens: n = 6 (4%)

Re-Op: n = 22

- Fistulektomie : n = 13
- plast. Verschuß: n = 1
- Persist. Fistel: n = 5
- Rekonstruktion: n = 3(2)

Re-Rekonstruktion: n = 6

- Heilung(1 Stoma): n = 3
- Persist. Fistel: n = 3

Gesamt-Heilung: n = 139 (94%)



Gesamt-Heilung mit Primärer Rekonstruktion: 89 %

Kontinenz nach Rekonstruktion: Literatur

n=16, Hohe Fisteln, 25% Rezidive, FU.: 40 Mo.

	Präop. (n=16)	Postop. (n=16)	Sig.
Kontinenzstörung	50 %	6,2 %	sig.
Score inkontinente Pat.	8,5 P.	1,8 P.	sig.
Score Kontinent Pat.	0 P.	0,6 P.	ns
Rezidive	-	6,2 %	

Kontinenz nach Rekonstruktion: Literatur

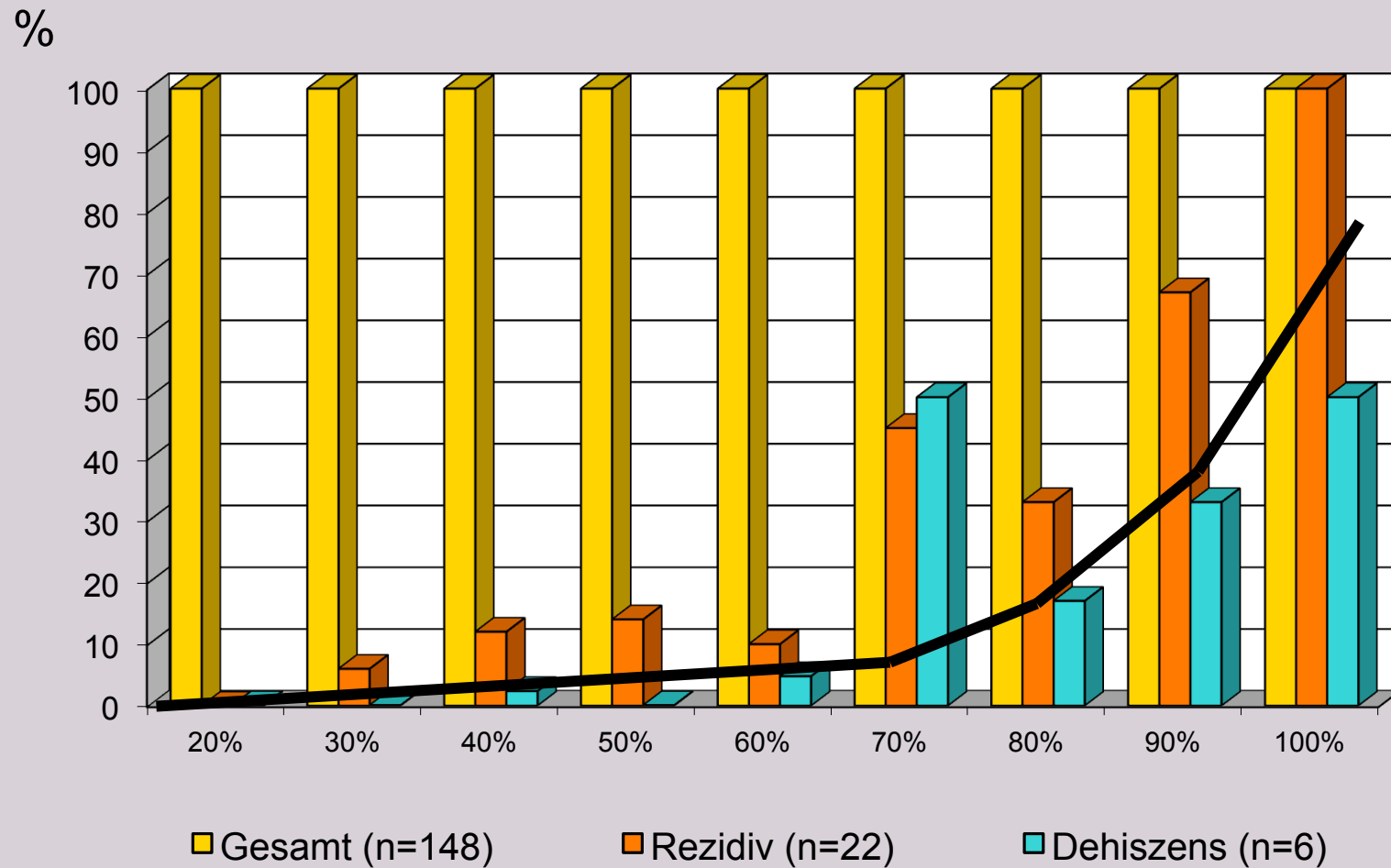
n=72, > 30% EAS-Beteiligung, FU.: 100%, 30 Mo.

	Präop. (n=72)	Postop. (n=72)	Sig.
Kontinenzstörung	4,2 %	5,6 %	ns.
Soiling	2,8 %	13,9 %	sig.
Score CCF	0,1 P.	0,2 P.	ns
Dehiszens		1,4 %	
Rezidive	-	5 %	

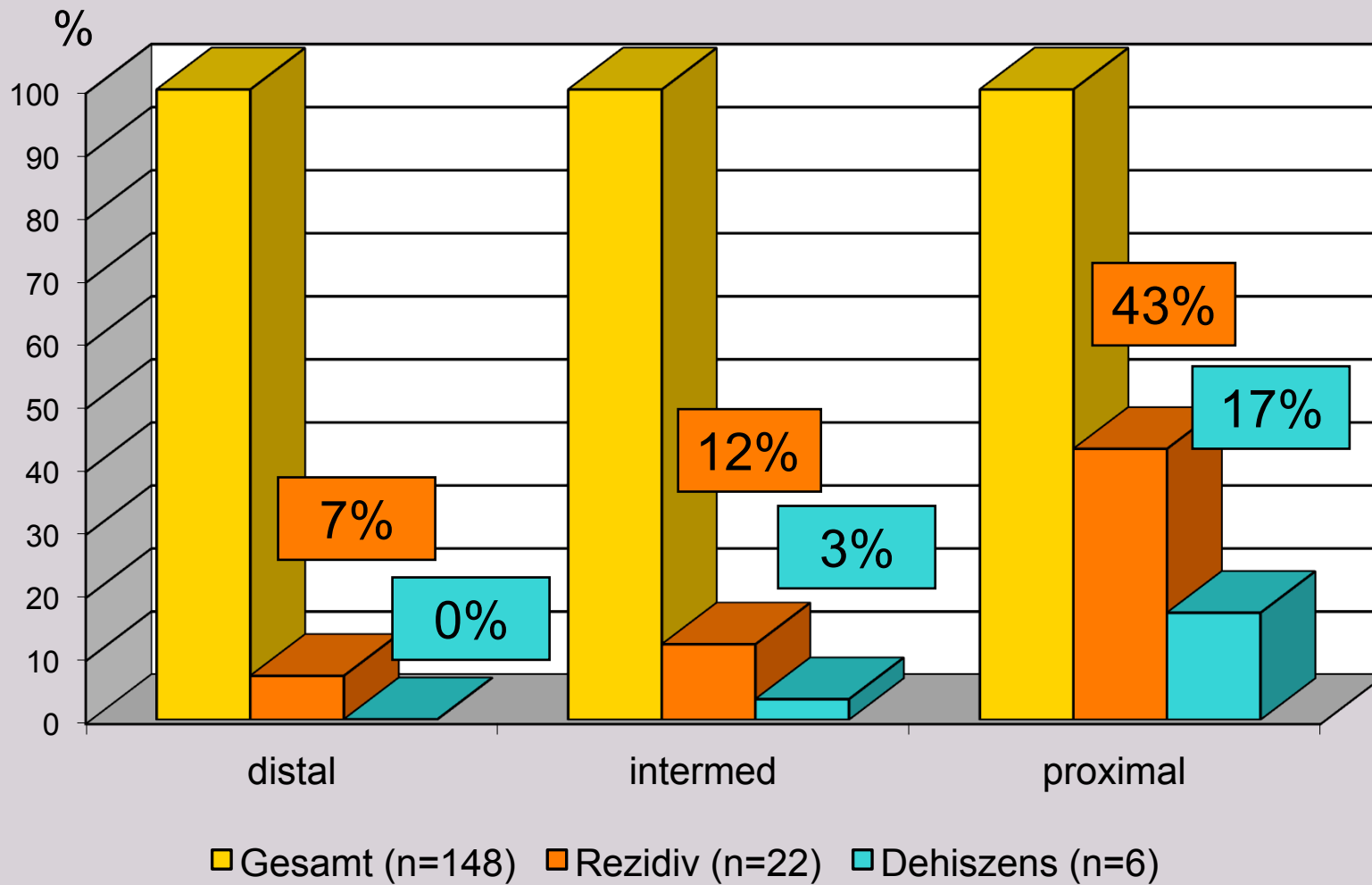
Literatur - Ergebnisse

<i>Autor</i>	<i>Jahr</i>	<i>n</i>	<i>Typ</i>	<i>Dehiszenz</i>	<i>Rezidive</i>	<i>Inkontinenz</i>
Parakash (Ind)	85	120	distal	-	2,5%	-
Lux (D)	91	46	mixed	0	0%	20% (1+2°)
Christiansen (DK)	95	14	mixed	-	15 %	21% (1+2°)
Gemsenjäger (CH)	96	21	mixed	5%	5 %	5 %
Lewis (GB)	96	32	mixed	-	9,5 %	
Roig (E)	99	31	mixed	4%	10 %	24% (1+2°)
Perez (E)	05	35	mixed	-	6%	12 %
Perez (E)	06	16	mixed	0%	6%	(improved)
Herold (D)	06	84	mixed	5%	6%	no 3°
Sprekelsen (E)	08	8	distal	-	12%	25% (1°)
Ruppert (D)	10	153	trans	6%	21%	12%
Herold (D)	09	148	mixed	4%	15%	18/14/1,5%
Kraemer (D)	11	38	mixed	3%	4%	5%
Arroyo (E)	12	70	trans	0%	8,5%	17%
Ratto (I)	13	72	mixed	1,5%	4,1%	?/14/1,4%

Ergebnisse in Bezug auf durchtrennte Muskulatur (%)



Ergebnisse in Bezug auf durchtrennte Muskulatur (%)



Sonstige Einflussfaktoren

Alter: ns

Geschlecht: ns

Anale Vor-Op (nicht Fistel): ns

Multiple Fisteln: ns

Rauchen: ns

Crohn/CED: ns

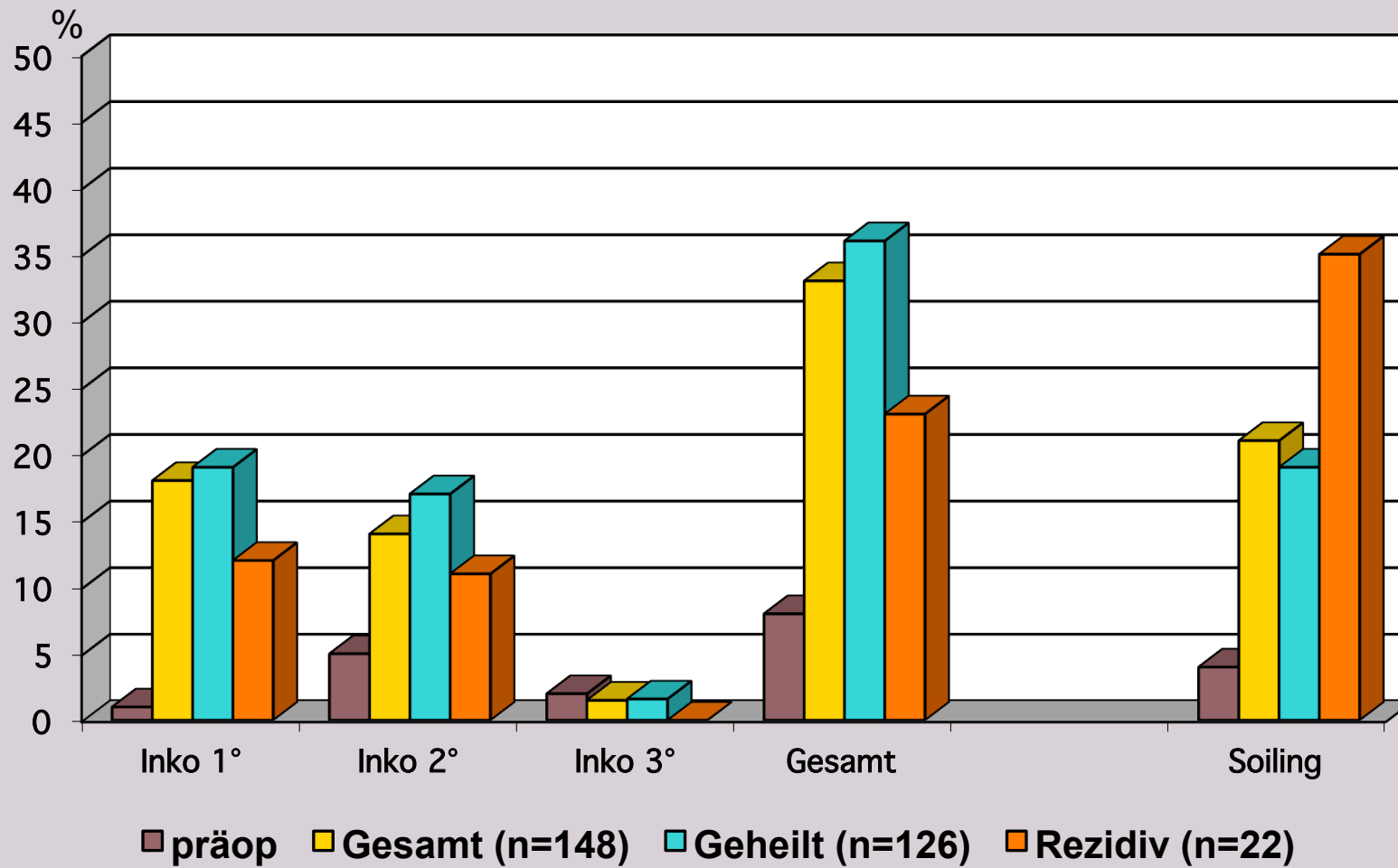
Crohn-Fistel: ns

Medikation: ns

Rezidiv: sig.

Anzahl Vor-Op: sig.

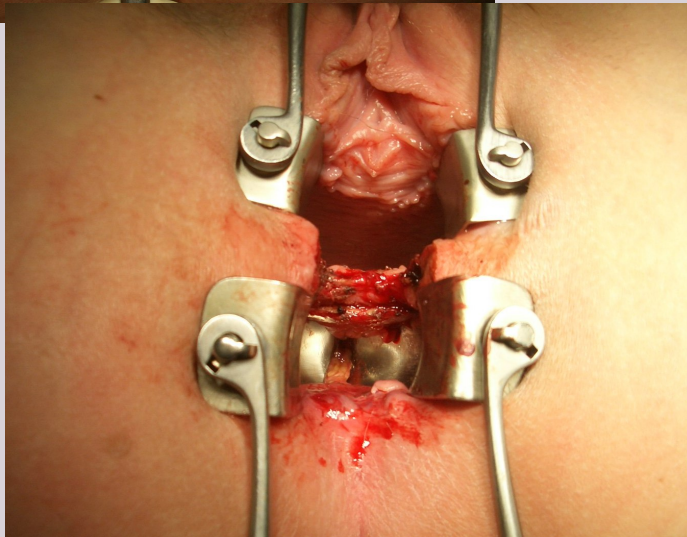
Kontinenz nach Rekonstruktion



Literatur - Ergebnisse

<i>Autor</i>	<i>Jahr</i>	<i>n</i>	<i>Typ</i>	<i>Dehiszenz</i>	<i>Rezidive</i>	<i>Inkontinenz</i>
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Lewis (GB)	96	32	mixed	-	9,5 %	
Roig (E)	99	31	mixed	4%	10 %	24% (1+2°)
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Episioproktotomie mit primärer Rekonstruktion



Episioproktotomie mit primärer Rekonstruktion

n= 87, RV-Fisteln, FU.: 49 mo., Heilung 78% (Flap 63% ns)

TABLE 1. Demographics and patients' characteristics

<i>Variables</i>	<i>Episioproctotomy</i> 50 (57.5%)	<i>Advancement flap</i> 37 (42.5%)	<i>P</i>
Age	42.0 ± 9.5	44.8 ± 11.7	.3
BMI	27.6 ± 6.7	29.6 ± 8.4	.3
Smoking	11 (22%)	12 (32.4%)	.3
Etiology			
Obstetric	36 (72%)	18 (48.6%)	.03
Cryptoglandular	14 (28%)	19 (51.4%)	
Ethnic group			
White	46 (92.0%)	33 (89.2%)	.7
African American	2 (4.0%)	3 (8.1%)	
Others	2 (4%)	1 (2.7%)	
Follow-up time, mo (mean)	48.5 ± 44.3	50.3 ± 34.7	.6
Vaginal delivery	38 (76%)	20 (54.1%)	.08
Episiotomy/tears	32 (71.1%)	11 (37.9%)	.006
ASA (mean ± SD)	1.9 ± 0.6	2.1 ± 0.8	.2
Comorbidity			
Diabetes	5 (10.0%)	2 (5.4%)	.7
Pulmonary	1 (2%)	5 (13.5%)	.09
Cardiovascular	8 (16.3%)	1 (2.8%)	.07
Irritable bowel syndrome	5 (10.0%)	4 (10.8%)	1.0

Episioproktotomie mit primärer Rekonstruktion

n= 87, RV-Fisteln, FU.: 49 mo., Heilung 78% (Flap 63% ns)

TABLE 2. Preoperative and operative details

<i>Variables</i>	<i>Episioproctotomy 50 (57.5%)</i>	<i>Advancement flap 37 (42.5%)</i>	<i>P</i>
Seton			
Yes	15 (30.0%)	11 (30.6%)	.9
No	35 (70.0%)	25 (69.4%)	
Stoma			
Yes	36 (75.0%)	19 (54.3%)	.051
No	12 (25.0%)	16 (45.7%)	
No. of repairs, median (range) ^a	3 (1–4)	2 (1–4)	.3
Interval from last repair to current (mo) ^a	6.7 (4.7–10.5)	5.7 (4.4–11.8)	.6
Interval from seton to current repair (mo) ^a	2.5 (2–4.6)	2.7 (1.4–5.2)	.9
Interval from stoma to current repair (mo) ^a	4.4 (0–10.9)	4.5 (0–8.7)	.6

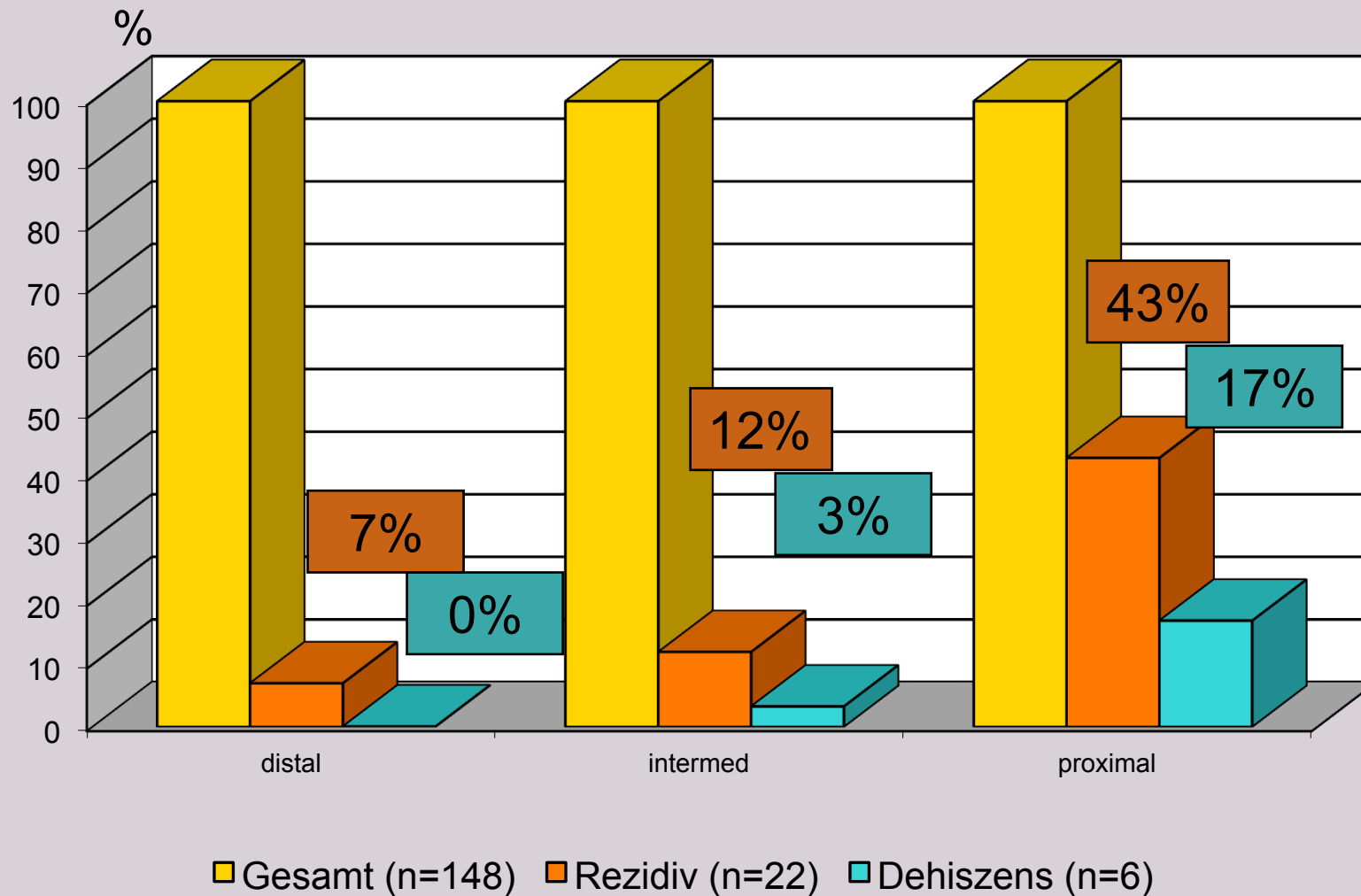
Episioproktotomie mit primärer Rekonstruktion

n= 87, RV-Fisteln, FU.: 49 mo., Heilung 78% (Flap 63% ns)

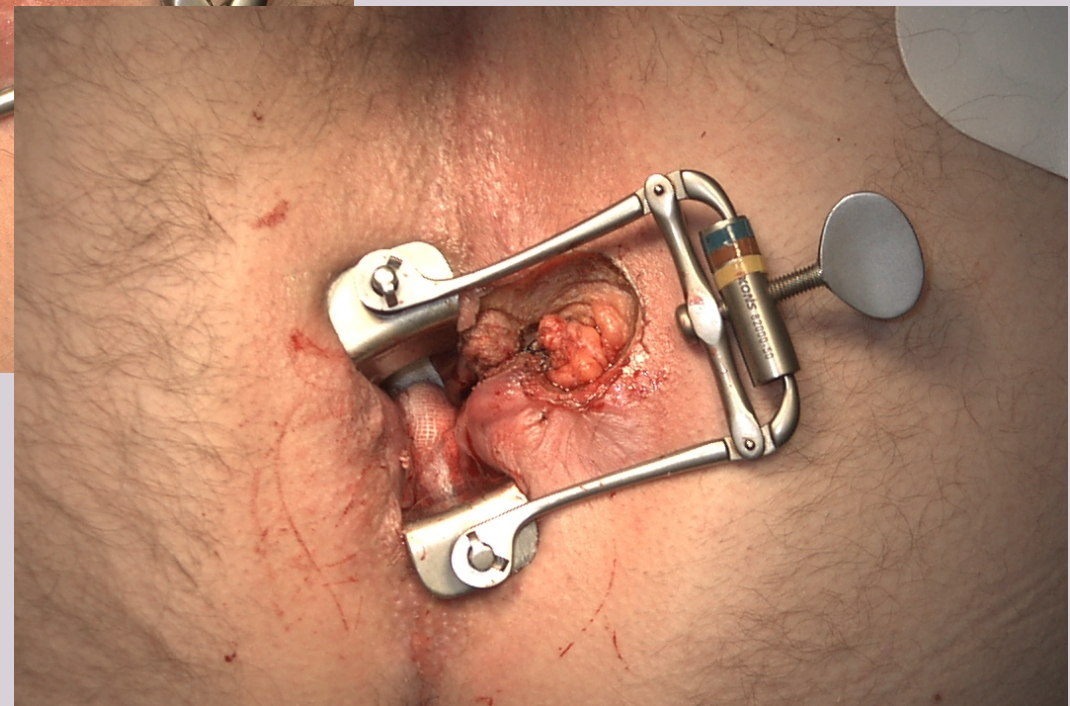
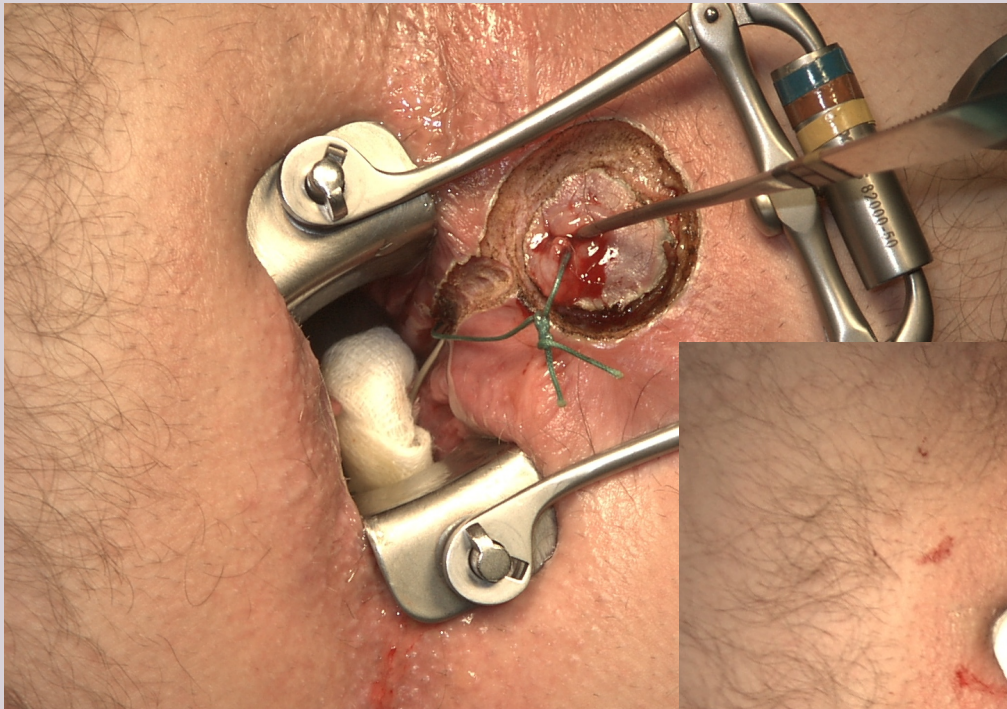
TABLE 4. Fecal incontinence

<i>Fecal incontinence</i>	<i>Never/rarely</i>	<i>Usually/always</i>	<i>P</i>
EP n = 50 (57.5%)			
Preop	25 (50%)	25 (50%)	<.001
Postop	46 (92%)	4 (8%)	
RAF n = 37 (42.5%)			
Preop	23 (62.1%)	14 (37.9%)	.4
Postop	25 (67.6%)	12 (32.4%)	

Ergebnisse in Relation zu beteiligter Muskulatur



Primäre Rekonstruktion bei distaler Fistel



Zusammenfassung:

Fistulektomie mit primärer Rekonstruktion könnte eine Option bei hohen Fistel werden !

Vor dem Hintergrund sehr guter Heilungsgraten könnte dies auch bei distalen Fisteln sinnvoll sein !

Ende

Vielen Dank für Ihre Aufmerksamkeit !