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Possible impact of anastomosis onto surgical & oncological outcome in resection of primary colon cancer (CA) - data obtained from a prospective multicenter observational study

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Intestinal anastomosis → Prognostic factor? - ABSTRACT

Aim: To investigate the influence of surgical technique, the possible creation of intestinal anastomosis, & surgical urgency on the early postop. (not shown) & long-term outcome of patients w/ primary colon CA
Methods: Through a 7-years time period, all consecutive patients w/ histologically diagnosed primary colon CA were registered.
Results: - *Basic data*: From 2010–2016, data from 14,466 patients were documented (mean age, 72.8 [range, 22–96] years; sex ratio, m:f=7,696:6,770); 717 patients (4.96%) were included in a matched-pair analysis. The majority of these patients underwent elective surgery (*n*=12,620 patients; 87.2%) regardless of whether a bowel anastomosis or a "stoma" was created. In emergency surgery, a bowel anastomosis was possible in a large proportion (*n*=1,332 patients [72.1%]). In contrast, in 514 patients (27.9%) who had undergone emergency surgery, a stoma was created. Interestingly, stoma had to be created even less frequently in patients who had undergone planned surgery (*n*=366 [2.5%]).
- *Long-term outcome*: Early postop. mortality had major impact onto survival. The most important factors influencing long-term survival were age, resection status & tumor stage (according to TNM/UICC). The more advanced tumor stage was classified, the lower the long-term survival. Kaplan-Meier curves for surgical technique & urgency showed significant differences in survival time in the matched-pair analysis. Patients categorized with the same tumor stage, age & risk factors had a better chance of survival, if they had been operated electively & w/ intestinal anastomosis. Interestingly, the multivariable analysis showed that older patients & such w/ distant metastasis benefit from a discontinuity resection.
Conclusion: The association of intraop. & postop. complications w/ increased postop. mortality as well as preexisting risk factors & periop. complications is in line w/ findings of current studies. Furthermore, current studies also agree that older patients & such w/ reduced general condition benefit from discontinuity resection.

Intestinal anastomosis → Prognostic factor - INTRODUCTION

- Therapy of colon carcinoma (Colon CA) comprises – according to the guidelines – primarily adequate surgical resection of the tumor lesion incl. Lymphadenectomy, tumor-free resections margins & distance to the resection line (R0 resection status).
- Related to this, surgical interventions with primary anastomosis & discontinuity resections were distinguished.
- If (local) tumor-associated resectability & functional operability (length of surgical intervention, invasiveness of the intervention etc.) allow, resection preserving continuity of gastrointestinal passage is to be selected.
- If this is not the caese, discontinuity resection with stoma creation is to be chosen.

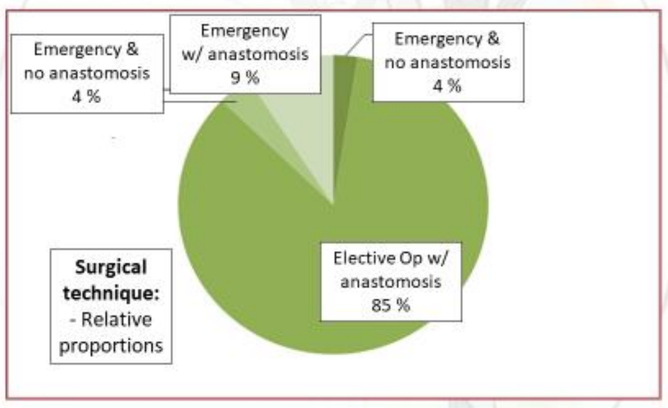
Intestinal anastomosis → Prognostic factor - METHODS

- Registration of all consecutive patients(Pat.) with histologically diagnosed primary colon CA (*DESIGN*: prospective multicenter observational study) on Pat.-derived, tumor(Tu) lesion-associated & treatment-related aspects. Early postop. outcome was characterized with morbidity & lethality, long-term oncosurgical outcome with 5-year(yr)-overall, 5-yr-Tu-free survival & 5-yr-local recurrency rate.
- **QUESTION:** Impact of surgical technique with regard to intestinal anastomosis & urgency of surgical intervention comparing elective *versus*(*vs.*) emergency operation onto early postop. & long-term oncosurgical outcome after operative treatment (surgical intervention) based on a representative number of Pat.

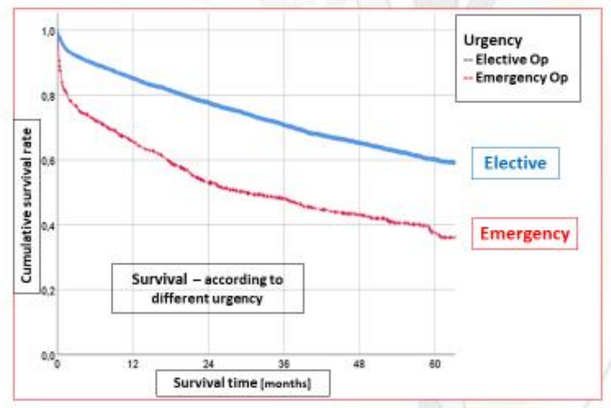
Intestinal anastomosis → Prognostic factor - METHODS

- $n_{\text{In total}}$= 14,466 Pat. with histologically primary colon CA
- Study design: Clinical systematic prospective multicenter observational study
- Matched-pair analysis: *n* = 717 Pat.
- Aim parameter: → OUTCOME:
  - *Early postop.*: By means of morbidity / lethality
  - *Long-term oncosurgical*: By 5- yr- overall survival
    Tu-free survival (plus)
    local recurrency rate

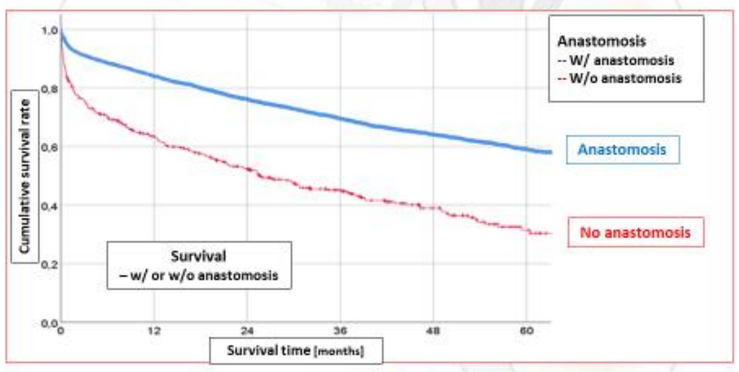
Intestinal anastomosis → Prognostic factor - RESULTS



Intestinal anastomosis → Prognostic factor - RESULTS (2)



Intestinal anastomosis → Prognostic factor - RESULTS (3)



Intestinal anastmosis → Prognostic factor - RESULTS (4)

- Matched-pair analysis:
  Kaplan-Meier assessment curves show significantly higher survival chances in Pat. of the same Tu stage,
  Age (and)
  Risk profile
  in elective surgical interventions with intestinal anastomosis!

- SUMMARY
  - Early postop. outcome: Postop. lethality can be mainly tarce back to:
    - Preop. physical condiciton ("ASA scoring") &
    - General complication rate
  - Long-term outcome: Most important influencing factors:
    * Age,
    * Tu stage &
    * R status

Intestinal anastomosis → Prognostic factor - RESULTS (5)

	p	Hazard Ratio (HR)	95,0% KI der HR
Altersklassen			
Altersklasse 1 vs 2	0,294	1,409	[0,743 ; 2,671]
Altersklasse 1 vs 3	0,002	2,244	[1,348 ; 3,736]
Altersklasse 1 vs 4	0,000	4,427	[2,614 ; 7,497]
Risikofaktoren			
0 vs 1	0,461	1,230	[0,709 ; 2,134]
0 vs 2	0,898	1,116	[0,842 ; 1,939]
0 vs 3	0,002	2,417	[1,368 ; 4,272]
pT			
pT1 vs pT2	0,594	1,774	[0,215 ; 14,617]
pT1 vs pT3	0,839	1,229	[0,167 ; 9,064]
pT1 vs pT4	0,473	2,081	[0,281 ; 15,394]
pN			
pN0 vs pN1	0,561	1,132	[0,746 ; 1,718]
pN0 vs pN2	0,006	1,762	[1,174 ; 2,644]
M-Status			
M0 vs M1	0,016	2,030	[1,14 ; 3,615]
R-Status			
R0 vs R1	0,071	1,981	[0,943 ; 4,165]
R0 vs R2	0,301	1,348	[0,768 ; 2,363]
Dringlichkeit			
elektiv vs Notfall	0,003	1,618	[1,175 ; 2,228]

Intestinal anastomosis → Prognostic factor - RESULTS (6)

	p	Hazard Ratio (HR)	95,0% KI der HR
Altersklassen			
Altersklasse 1 vs 2	0,341	0,764	[0,439 ; 1,329]
Altersklasse 1 vs 3	0,036	1,594	[1,03 ; 2,468]
Altersklasse 1 vs 4	0,000	3,277	[2,108 ; 5,094]
Risikofaktoren			
0 vs 1	0,268	1,392	[0,775 ; 2,499]
0 vs 2	0,166	1,536	[0,836 ; 2,822]
0 vs 3	0,002	2,692	[1,451 ; 4,996]
pT			
pT1 vs pT2	0,114	0,276	[0,056 ; 1,364]
pT1 vs pT3	0,019	0,166	[0,037 ; 0,743]
pT1 vs pT4	0,090	0,273	[0,061 ; 1,223]
pN			
pN0 vs pN1	0,748	0,942	[0,653 ; 1,358]
pN0 vs pN2	0,007	1,678	[1,151 ; 2,448]
M-Status			
M0 vs M1	0,046	1,680	[1,009 ; 2,796]
R-Status			
R0 vs R1	0,023	2,081	[1,107 ; 3,914]
R0 vs R2	0,029	1,797	[1,063 ; 3,039]
Dringlichkeit			
elektiv vs Notfall	0,027	1,385	[1,037 ; 1,849]

RESUMÉ

- When ever possible, an elective Op with intestinal anastomosis needs to be favored.
- Older Pat. (> 80 years) & those with distant metastases may benefit from stoma creation with better outcome.
- The association of surgical complications & lethality as well as additional diseases & complication rate confirm literature data.

ACKNOWLEDGEMENT

Many thanks for your attention