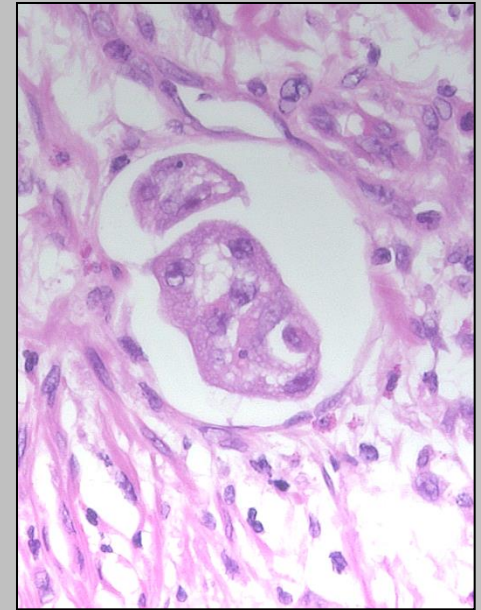
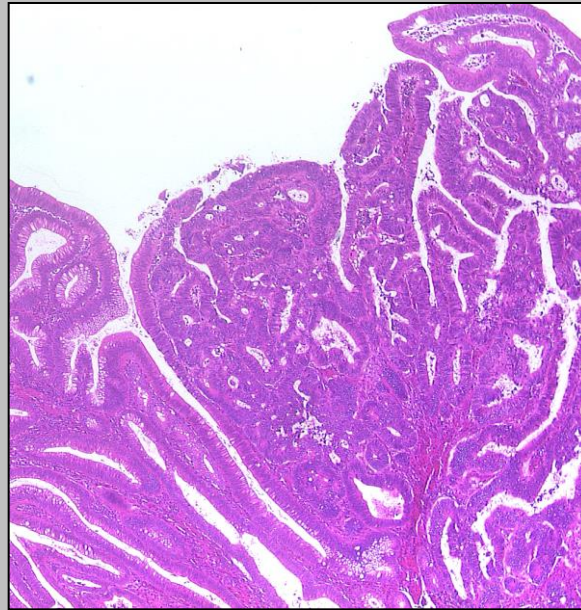
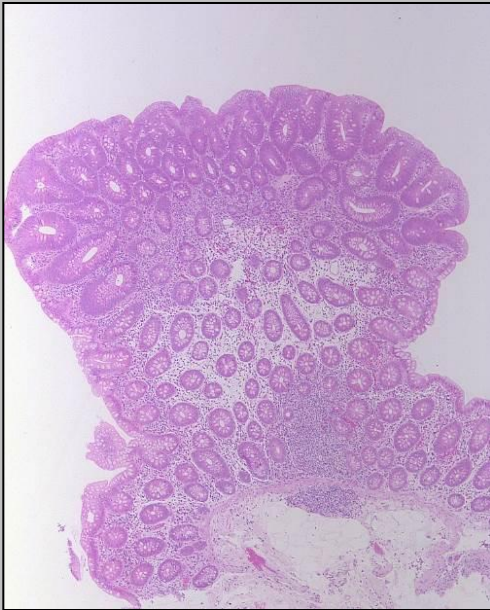
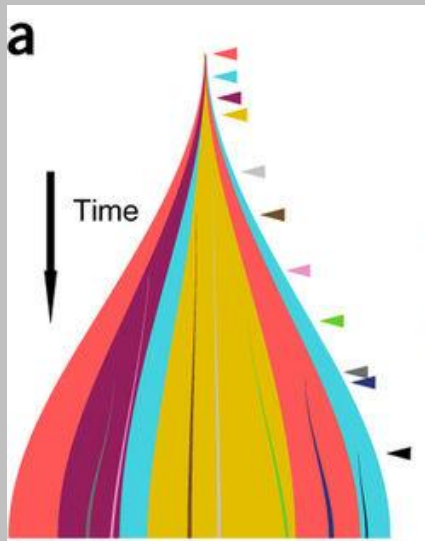
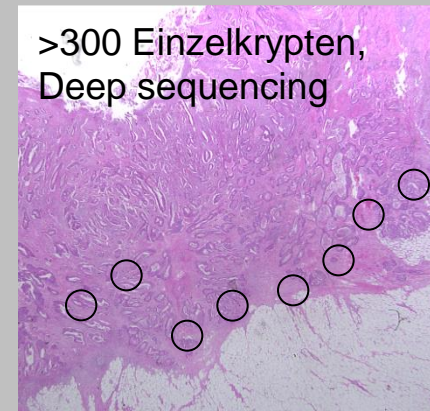
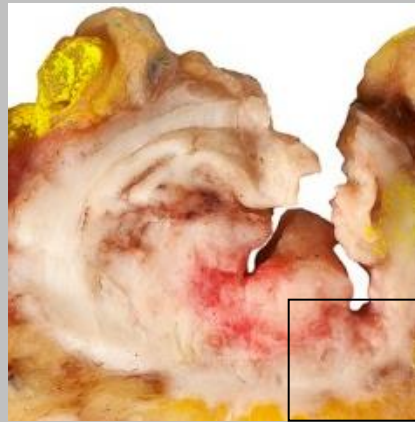
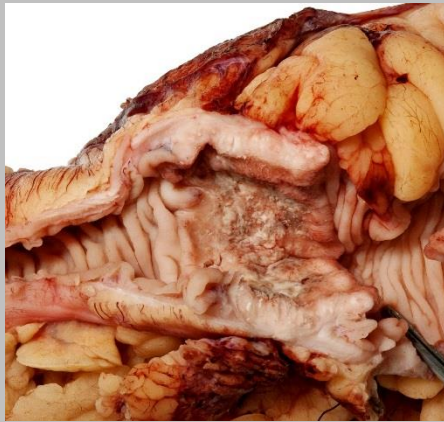


Vom low-grade Adenom zum Frühkarzinom: Pathologie von Polypektomien



A Big Bang model of human colorectal tumor growth

Nat Genet. 2015 March ; 47(3): 209–216

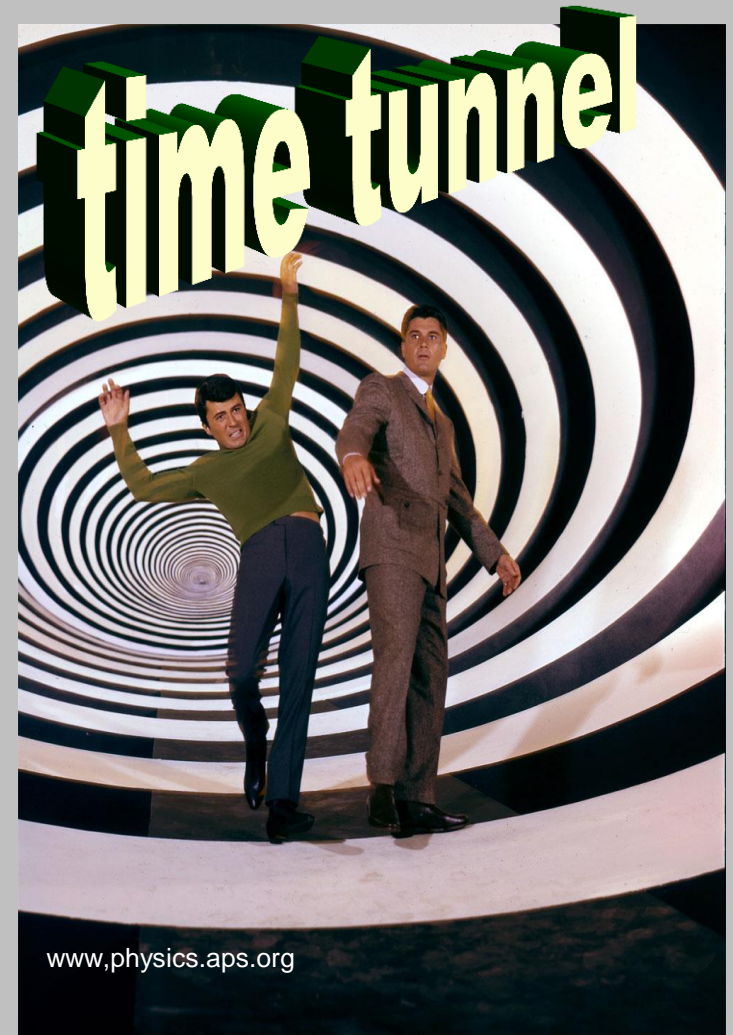
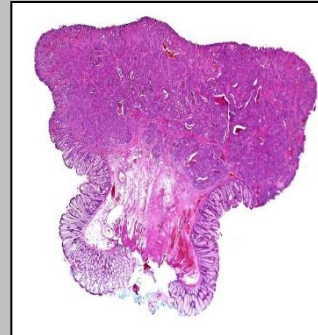
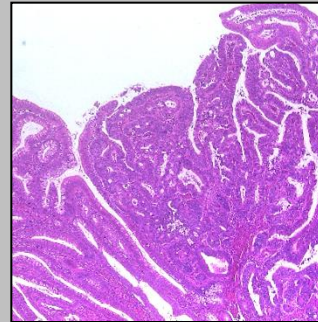
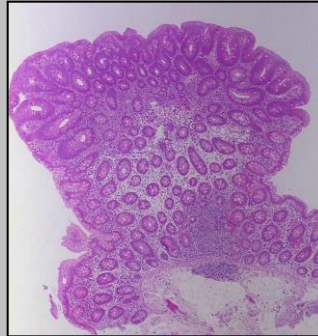


Die für die Tumorbilogie entscheidenden Mutationen entstehen am Anfang innerhalb von 1-12 Zellteilungen

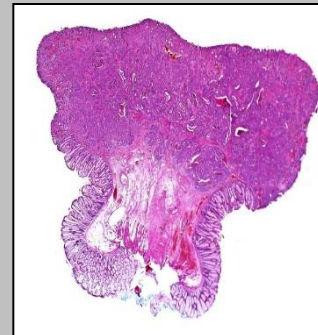
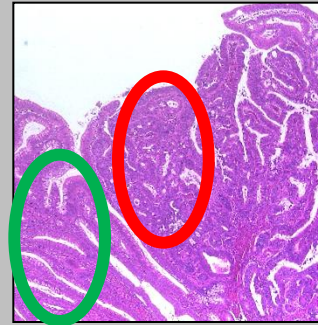
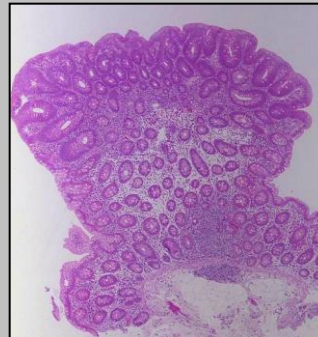
Eine Selektion zusätzlicher Mutationen in der Tumorprogression findet ohne Selektionsdruck nicht statt

Hochaggressive Tumoren sind „born to be bad“

Vom low-grade Adenom zum Frühkarzinom: Pathologie von Polypektomien



Vom low-grade Adenom zum Frühkarzinom: Pathologie von Polypektomien



20 pT1 Karzinome mit Vorläufer
11 pTis Karzinome mit Vorläufer



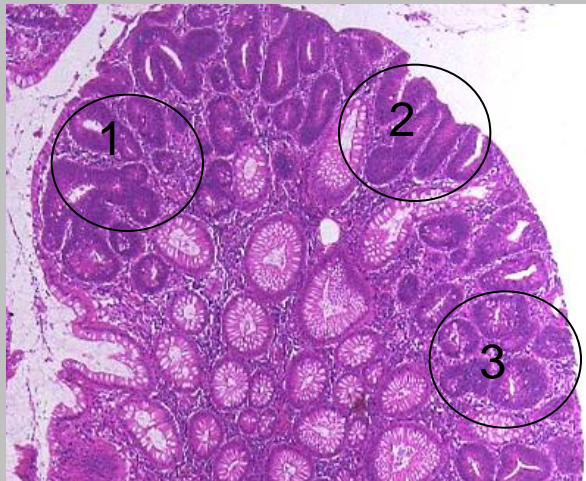
100 Gen-Panel NGS



Mutation Karzinom
- Mutation Adenom
= Transformations mechanismus

Vom low grade Adenom zum Frühkarzinom

- Adenomheterogenität
- Adenom-Karzinom Sequenz
- Low/high risk pT1 Karzinome: „born to be good and born to be bad“



1: APC + KRAS G12D

2: APC + PIK3CA

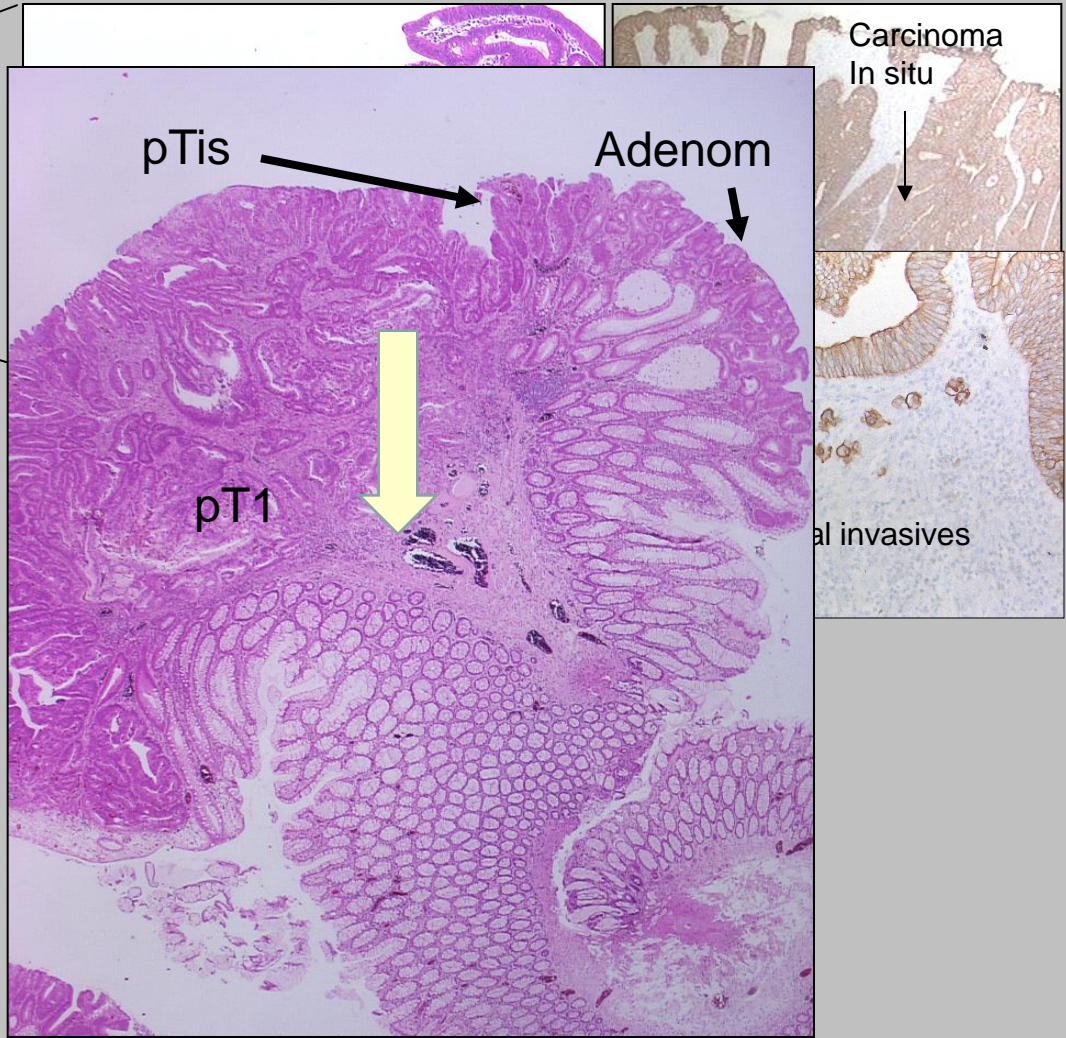
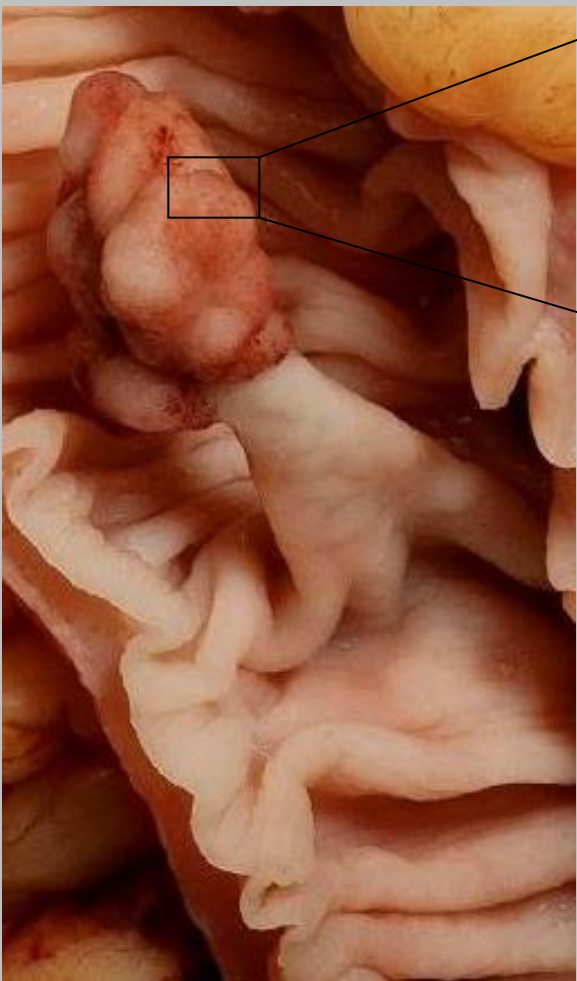
3: APC + KRAS G13D

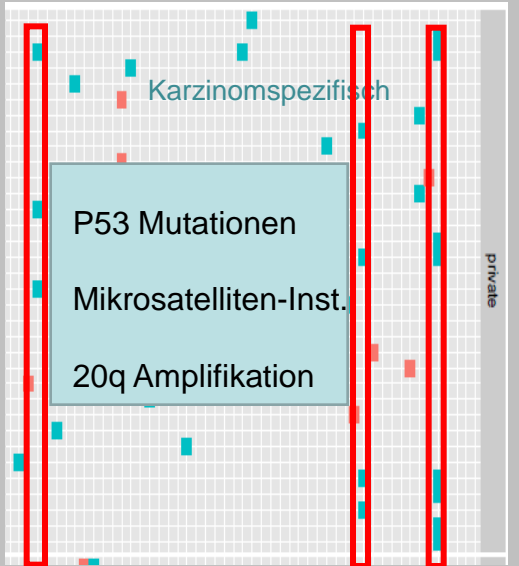
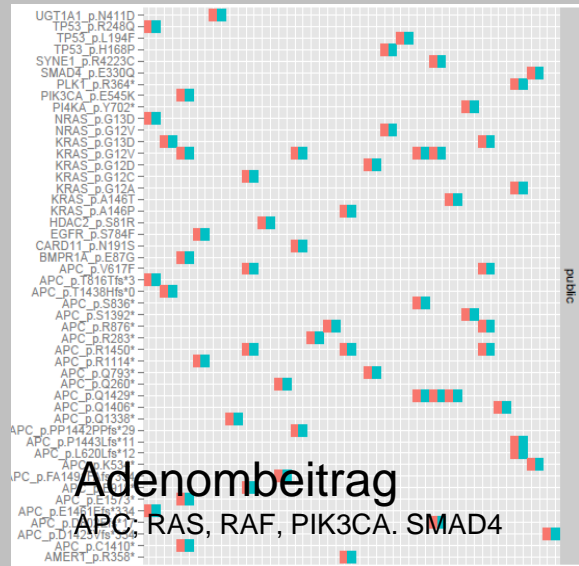
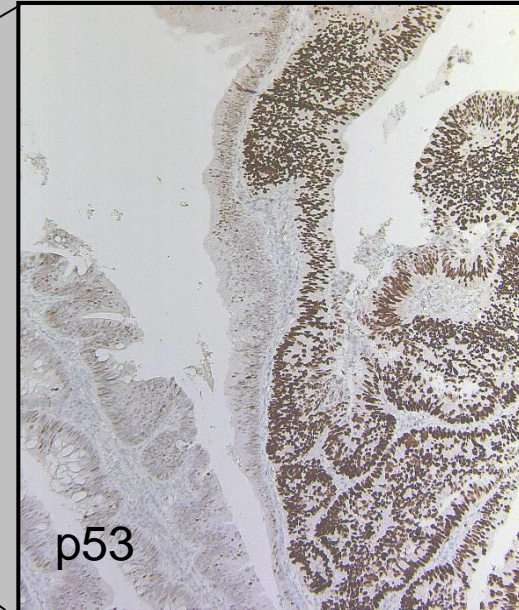
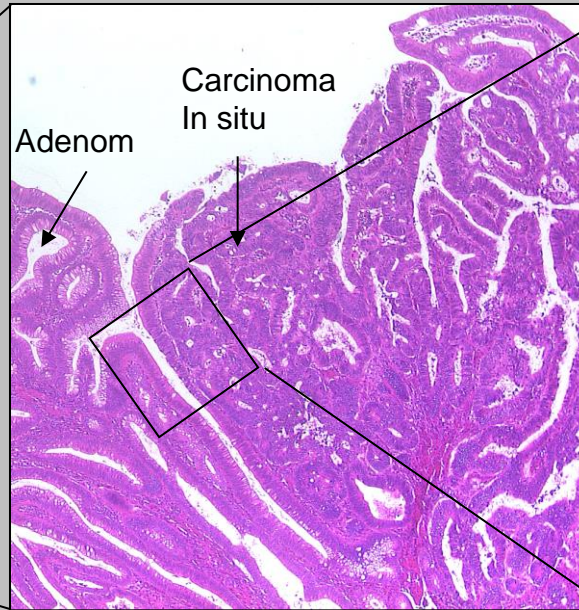
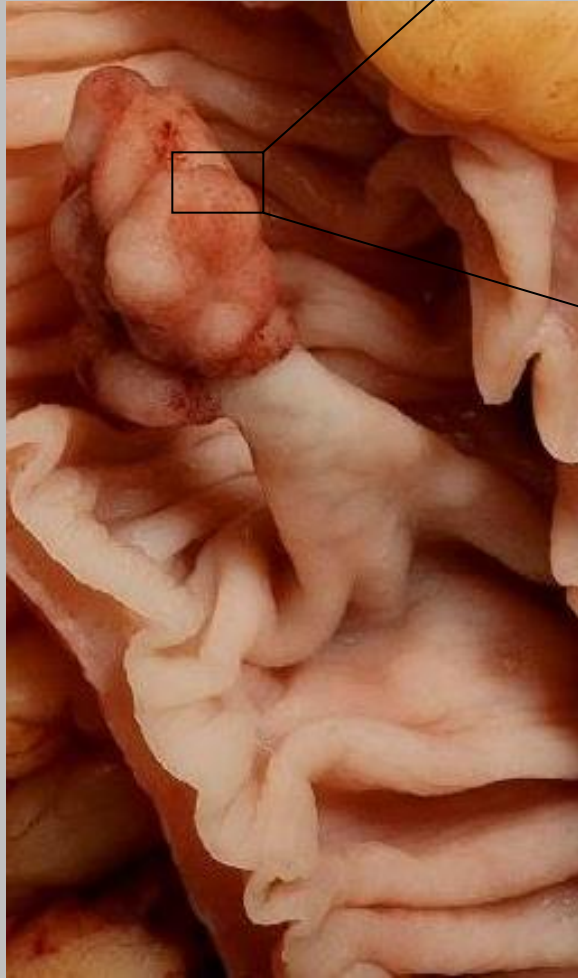
Kolonale Diversifikation von individuellen Adenomen vor dem sogenannten Big Bang

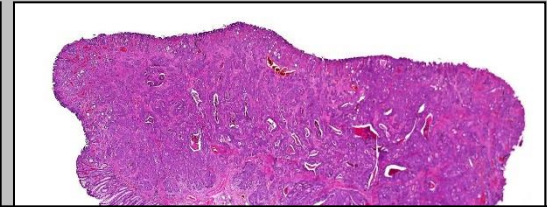
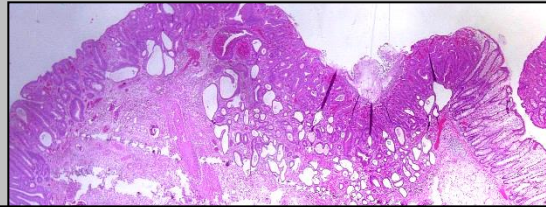
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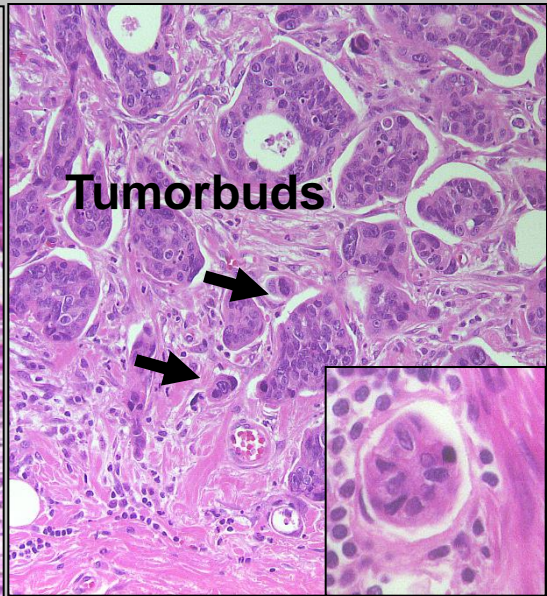
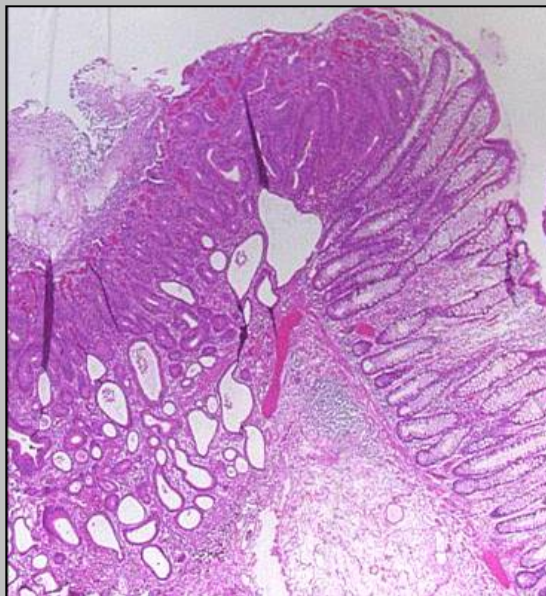
Vom Adenom zum pTis zum pT1







Deutsche Leitlinie 2017: + **Tumor budding**



Low risk
LK Metastase: <2%

High risk
LK Metastase: >14%

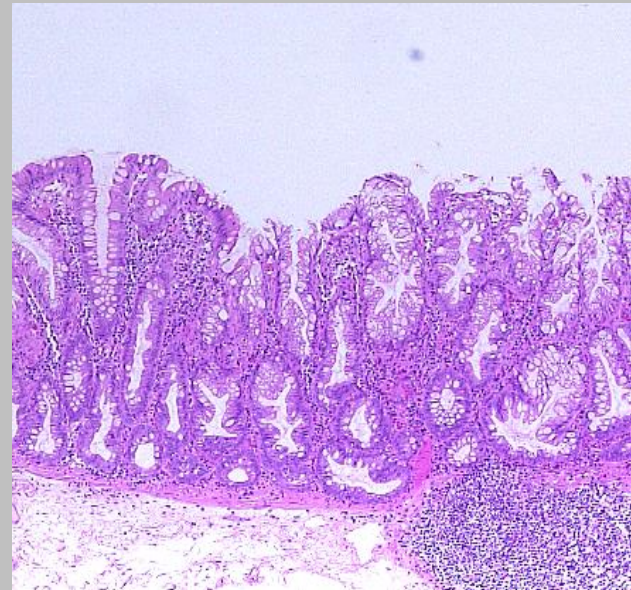
Zusammenfassung

- **Wesentliche molekulare Veränderungen, die für die Biologie eines Karzinoms entscheidend sind, entstehen im Adenom: vor dem sog. Big Bang**
- **Das mukosal invasive pTis Karzinom ist für einen Patienten ungefährlich, ist allerdings morphologisch und molekular den pT1-T4 Karzinomen ebenbürtig. Das Big Bang Modell stimmt.**
- **„Born to be bad“ Tumoren gibt es auch histologisch**
- **Einführung des Buddings als Risikofaktor bei pT1, R0 resezierten Karzinomen in Polypektomien (S3 LL 2017)**



APC
mut

Aneuploid



BRAF
mut

Diploid