

Management of appendiceal malignant tumors

23rd Belgian Surgical Week
2022

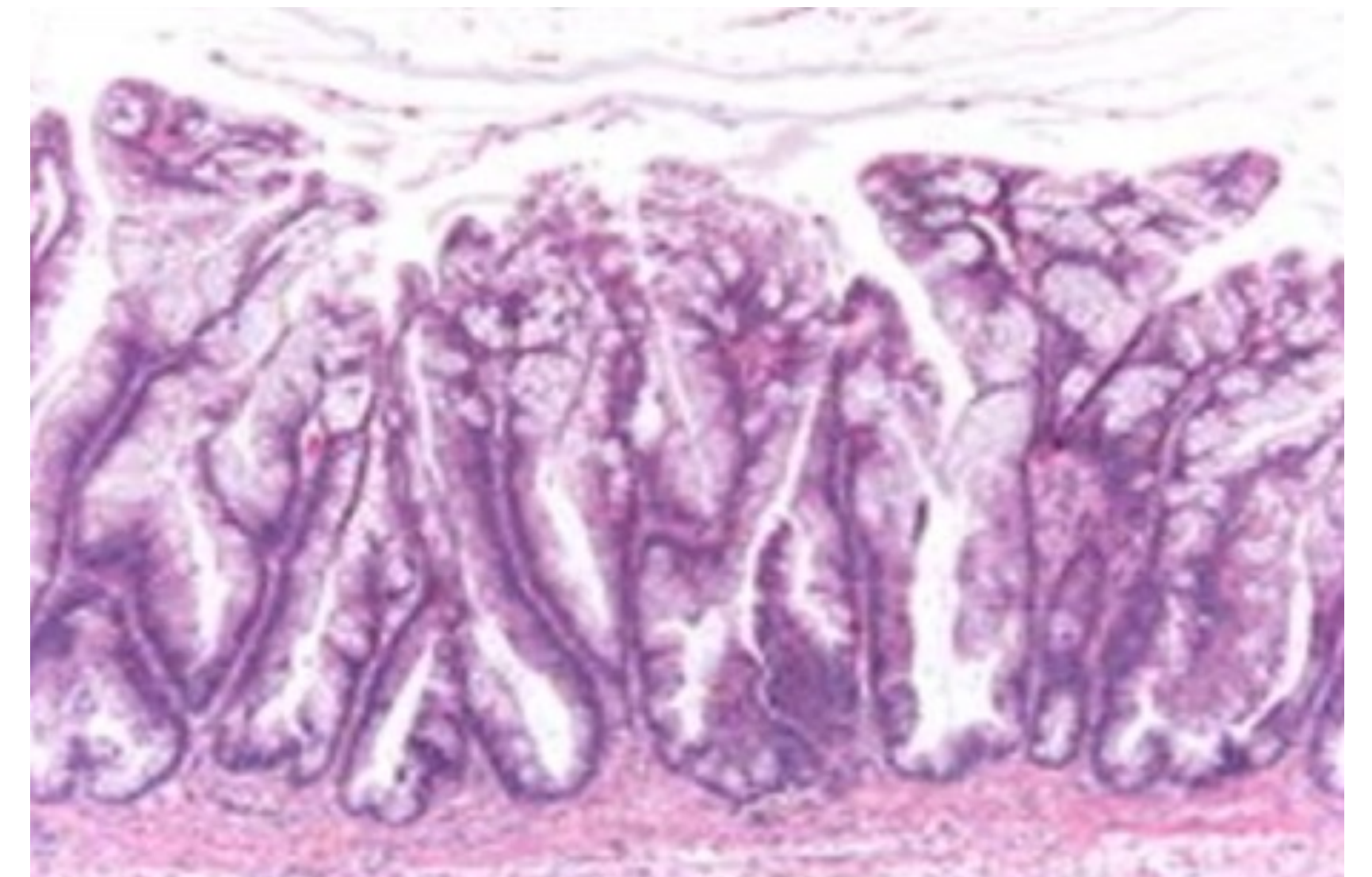
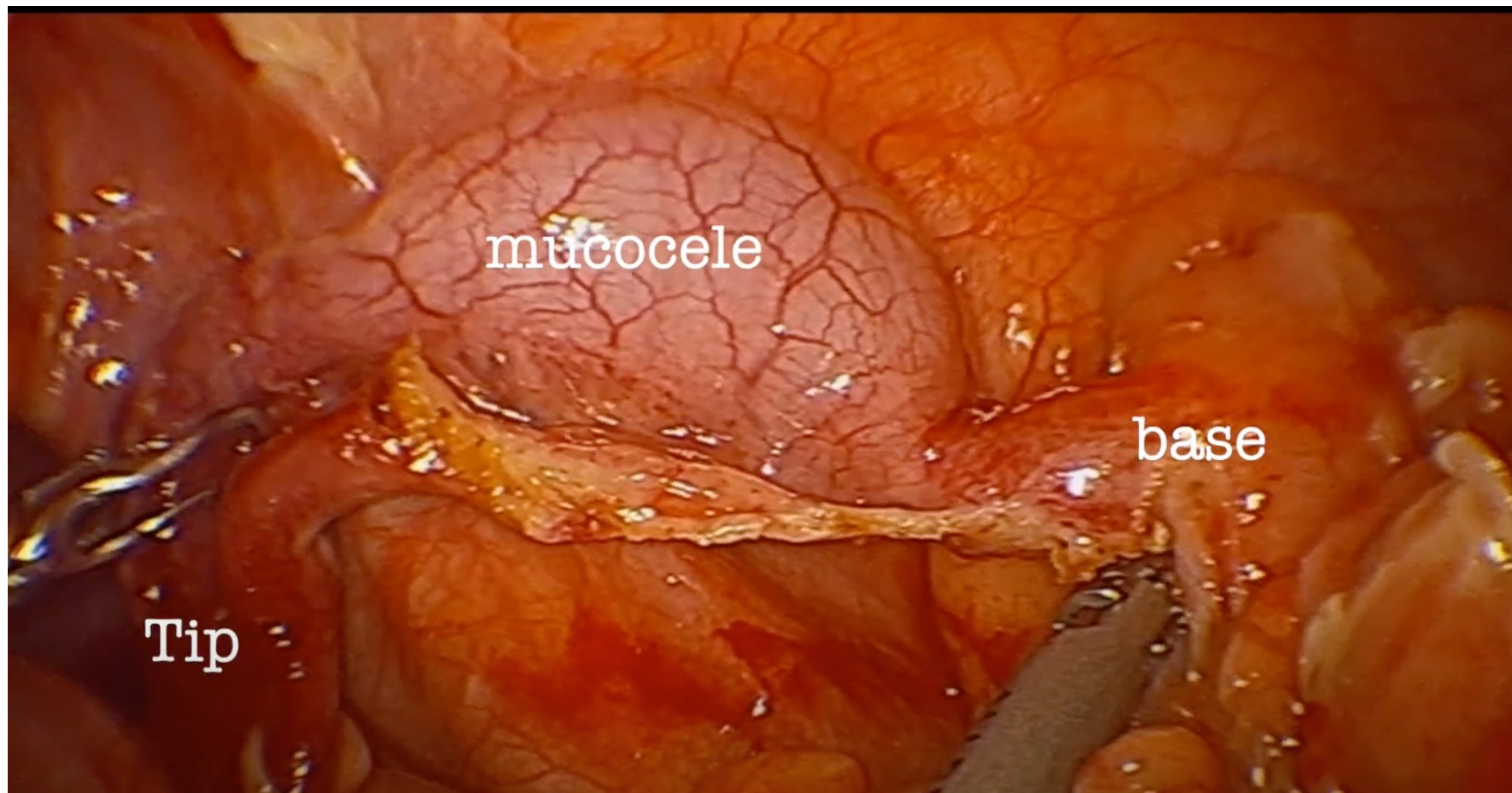
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05/05/2022

Table of contents

- **Introduction**
- **Aims of study**
- **Materials and methods**
- **Results**
- **Discussion**
- **Questions**

INTRODUCTION - Primary appendiceal tumor

- Appendiceal neoplasms \neq colorectal cancer



INTRODUCTION

Incidence

- Primary appendiceal neoplasms are **rare** :

Between 0.12-9.7/1.000.000/year.

- **Increasing incidence** :

- Better knowledge.
- Better medical imaging.

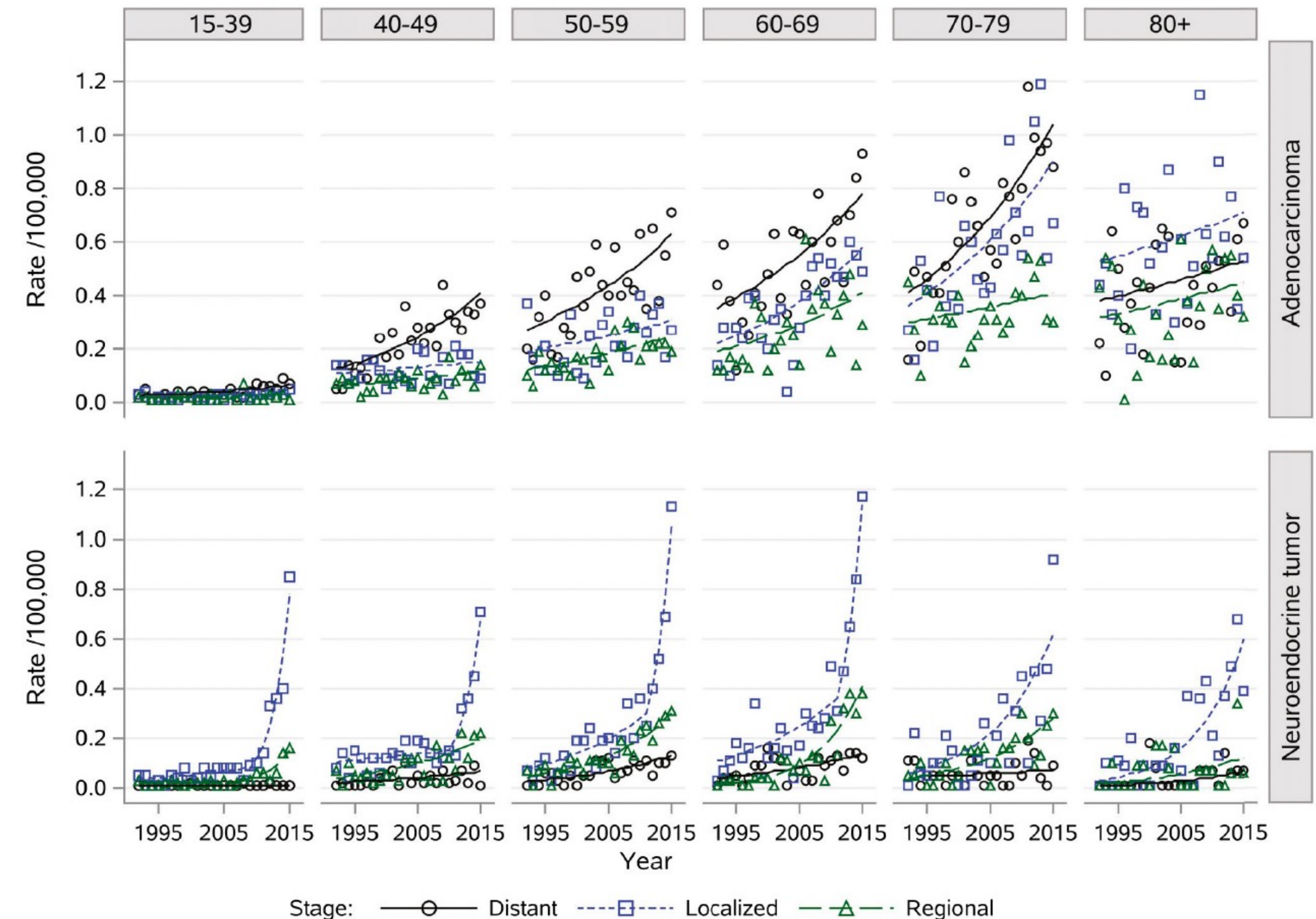
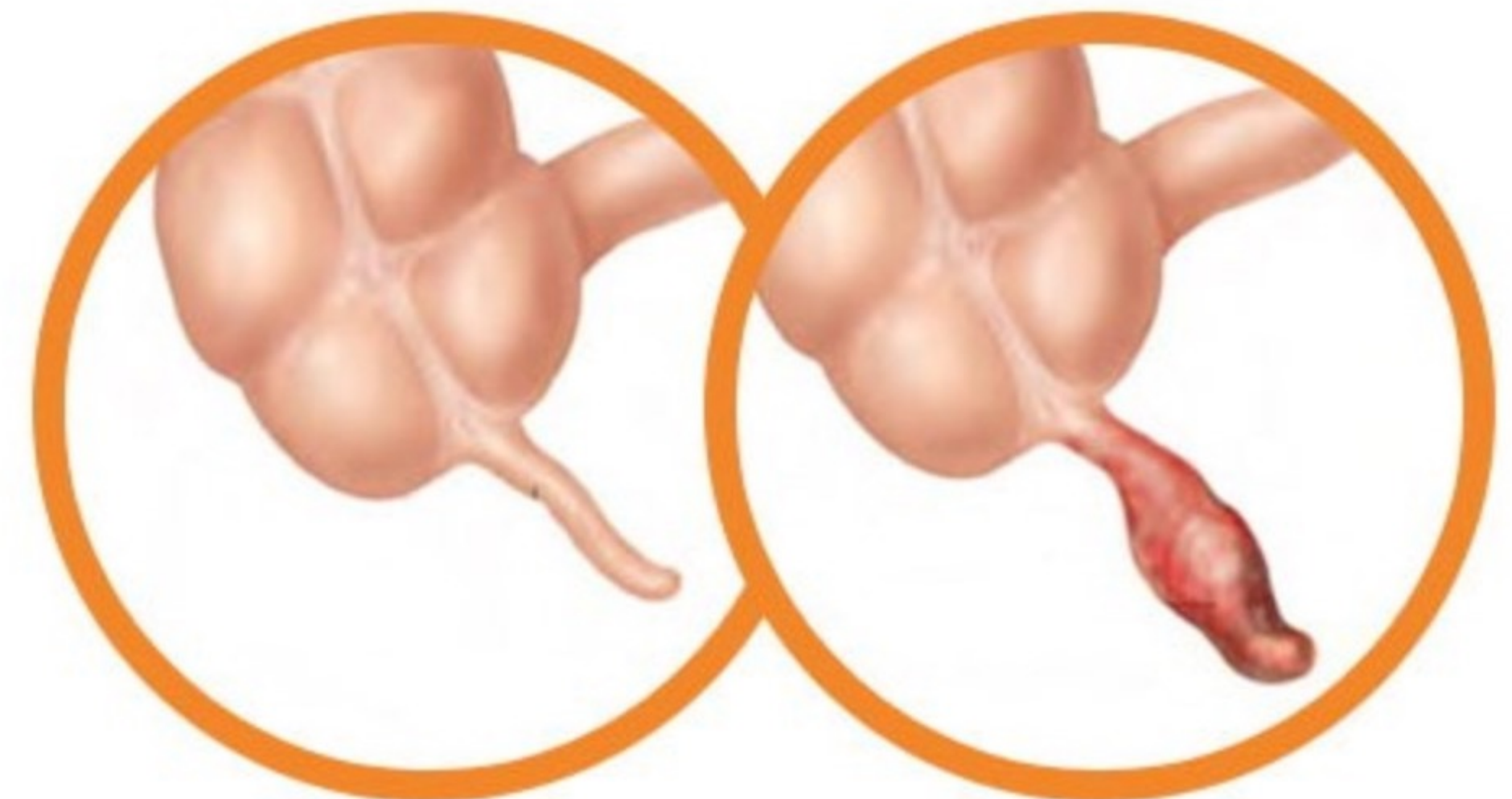
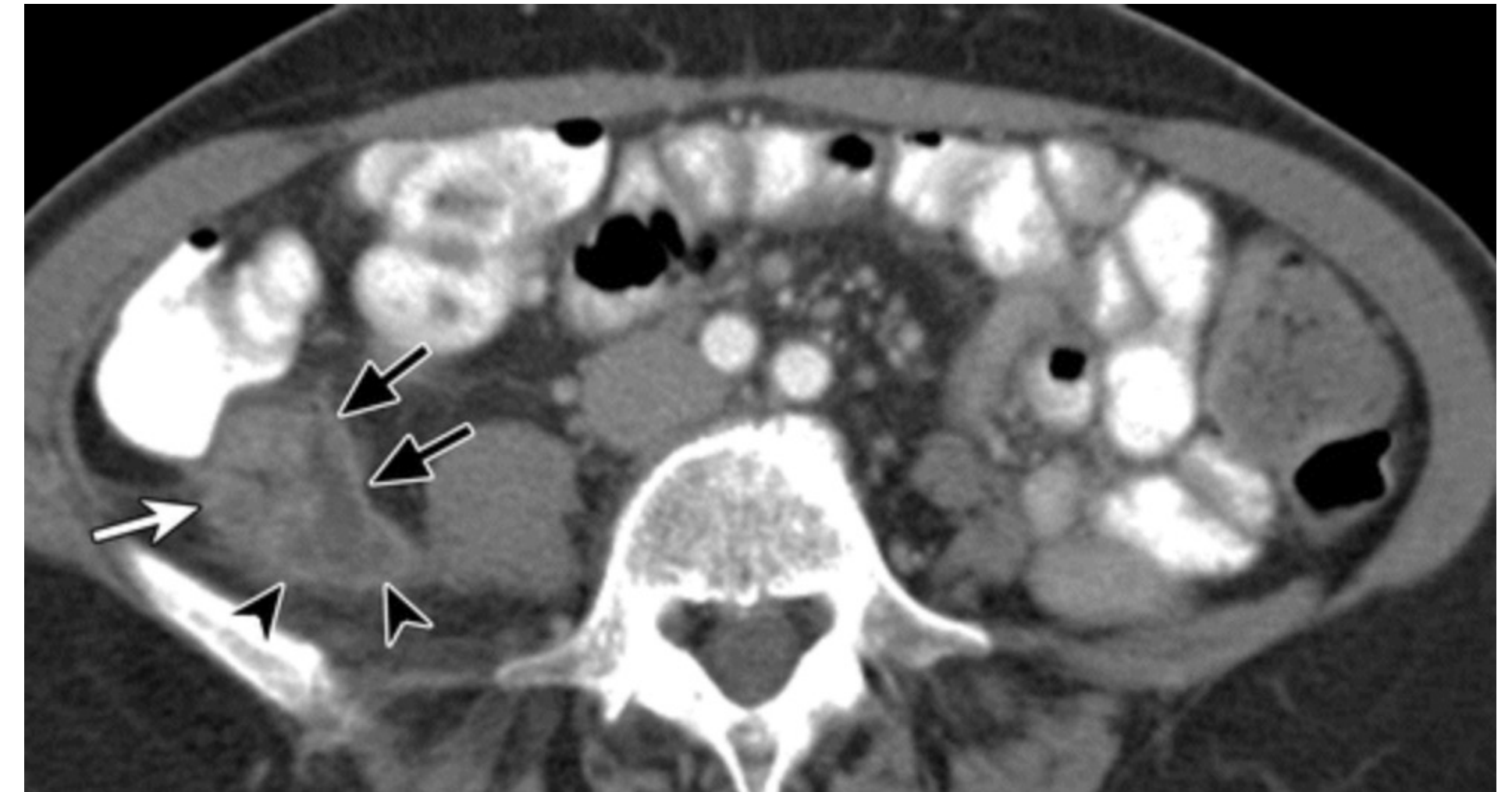


Figure 3. Age-standardized, age-specific rates of appendiceal adenocarcinomas and neuroendocrine tumors by tumor stage in the United States, 1992 to 2015, for both sexes combined.

INTRODUCTION

Mode of presentation

- **Incidental finding**
 - Appendicectomy for other pathology.
 - Medical imaging.
 - Colonoscopy screening.
- **Appendicitis**
- **Mass syndrome**



INTRODUCTION

Classification P SOGI

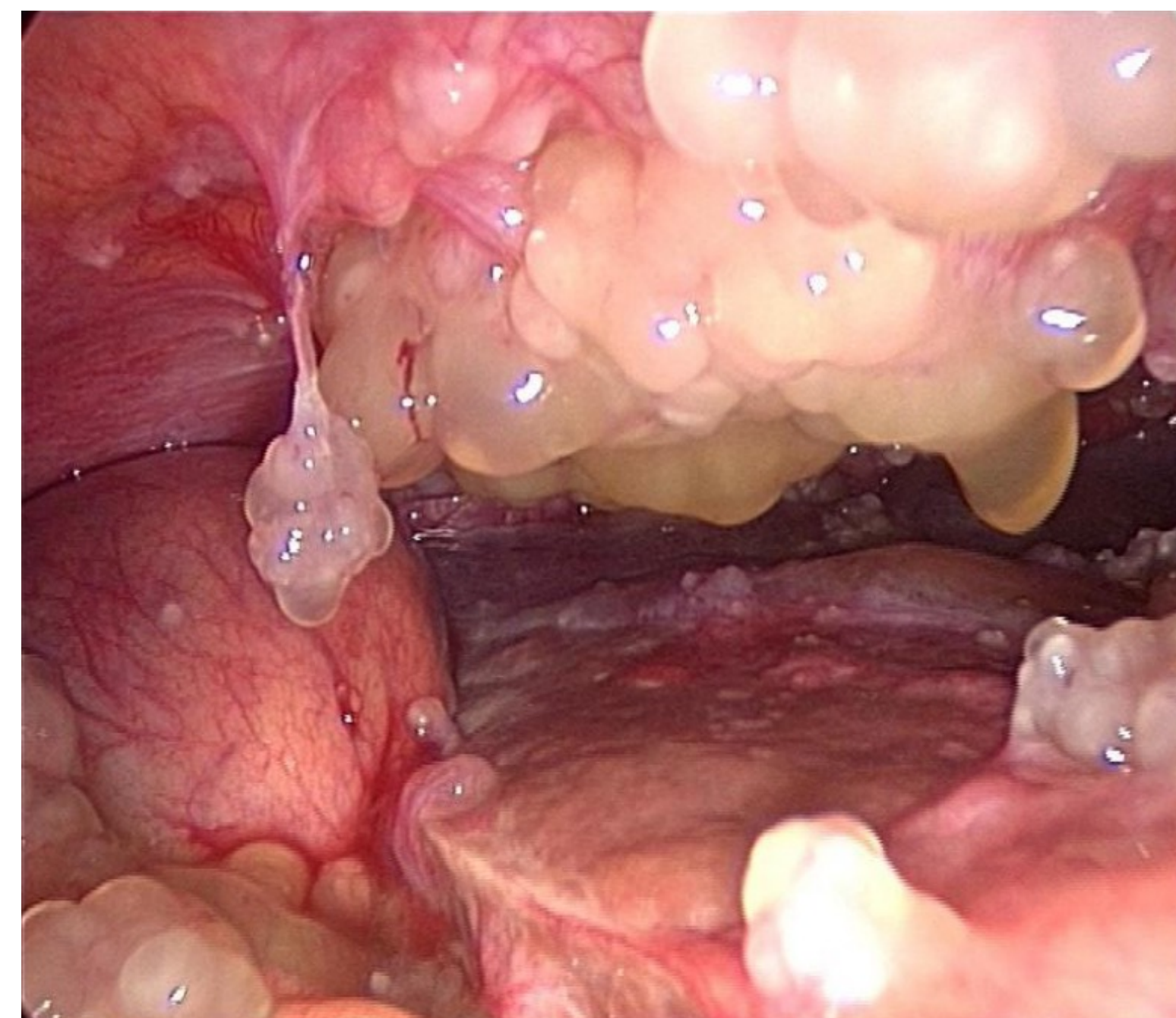
- **Epithelial neoplasms with neuro-endocrine features (95%)**
 - Neuro-endocrine tumour (NET)
 - Goblet Cell Carcinoid
- **Mucinous epithelial neoplasms**
 - Serrated polyp
 - LAMN - Low grade mucinous neoplasm
 - HAMN - High grade mucinous neoplasm
 - Mucinous adenocarcinoma
- **Non-mucinous epithelial neoplasms**
 - Adenoma
 - Adenocarcinoma

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Peritoneal pseudomyxoma !



AIMS OF STUDY

- **Primary outcomes**

- Management and treatment of appendiceal neoplasm.
- Overall survival and recurrence-free survival.

MATERIALS AND METHODS

- **Retrospective review**
- All appendiceal tumor diagnosed **between 2010 and 2021**
- **Patients recruitment** by COM Register and histology database
- **Data** come from medical charts
 - Age at diagnosis, sex
 - Histology, grade of tumor
 - Type of treatment : surgery, HIPEC, adjuvant chemotherapy
 - Follow-up, vital status
- **Statistical analysis**
 - Survival function estimated by Kaplan-Meier methods and log-rank test was used to assess the difference among the histologies. Not adjusted to age, sex or stade.

RESULTS

Incidence according to histological type :

- **103 appendiceal neoplasms** between 2010 and 2021.
 - 42 Neuro-endocrine tumors (NET) 40.7 %
 - 31 Non invasive tumors (LAMN and HAMN) 30.0 %
 - 14 Mucinous adenocarcinoma (M-ADK) 13.5 %
 - 16 Non-mucinous adenocarcinoma (E-ADK) 15.5 %

RESULTS

Patient and tumor characteristics

	NET		LAMN and HAMN		M-ADK		E-ADK	
Age (year)	40 (13-72)		63 (31-87)		65 (34-87)		68 (55-81)	
	n = 42	%	n = 31	%	n = 14	%	n = 16	%
Sex ratio (w/m)	24/18	57.1	17/14	54.8	9/5	64.2	7/9	43.7
Stage at diagnosis								
Localized (T1-T3)	40	95.2	16	51.6	4	28.5	4	25.0
Regional (T4-N+)	2	4.7	7	22.5	3	21.4	6	37.5
Pseudomyxoma	0	0	8	25.8	7	50.0	0	0
M+ distance							6	37.5

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First surgery								
Appendicectomy	35	83.3	20	64.5	4	28.5	8	50
Hemicolectomy	3	7.1	6	19.3	3	21.4	4	25
CRS +/- HIPEC	4	9.5	5	16.1	6	42.8	2	12.5
Revision surgery								
Second look	0	0	1	3.2	1	7.1	2	12.5
Hemicolectomy	7	16.6	3	9.6	1	7.1	5	31.2
CRS +/- HIPEC	2	4.7	6	19.3	3	21.4	3	18.7
Adjuvant chemotherapy	0	0	1	3.2	4	28.5	8	50

CRS = cytoreductive surgery

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5-year recurrence-free survival		100		100		50		75

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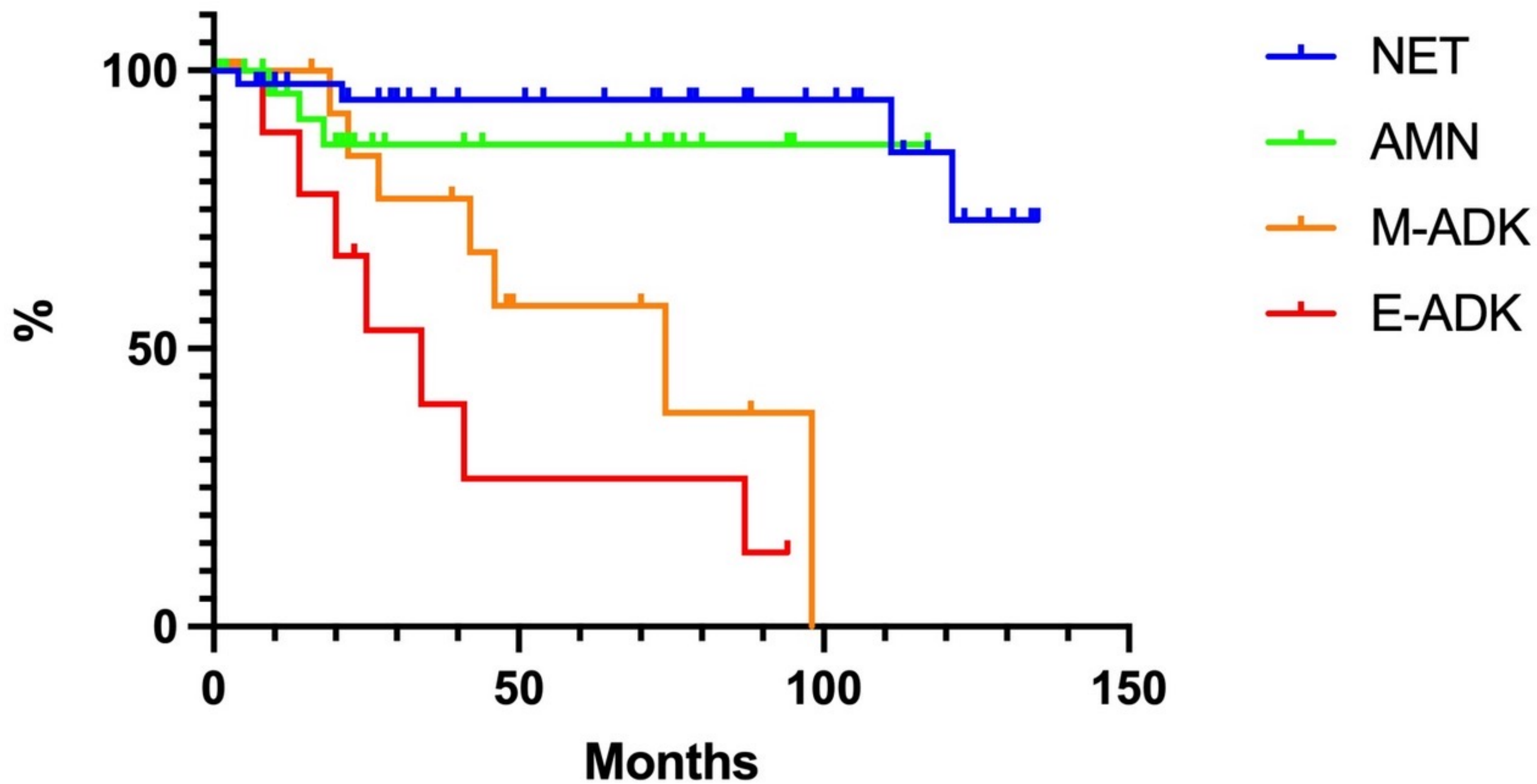
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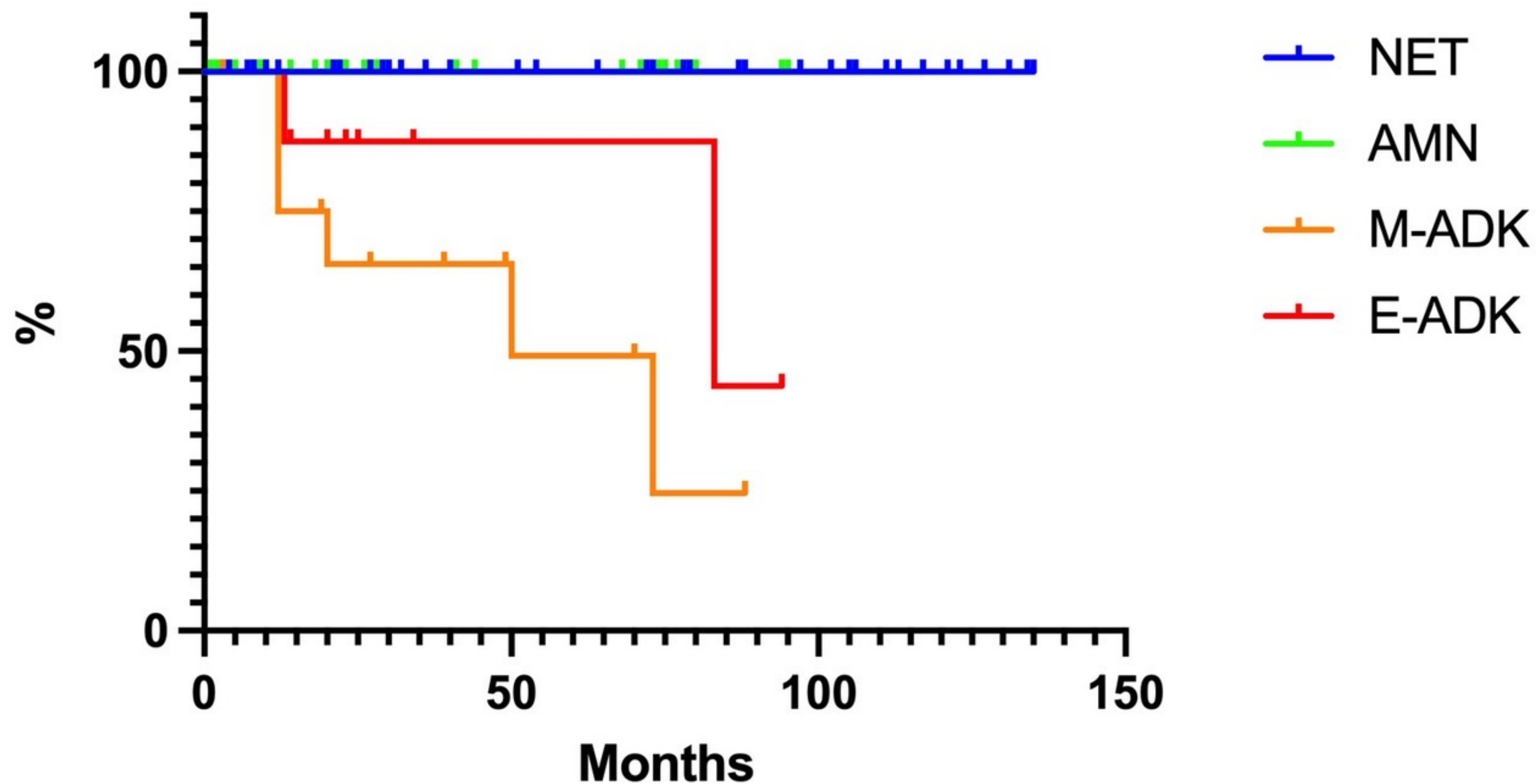
RESULTS

Overall survival rate according to histology



RESULTS

Recurrence-free survival rate according to histology



DISCUSSION

Generality

- In our study, 70% of appendiceal neoplasms are incidentally discovered during surgery or on appendicectomy specimen.
- Evolution and prognosis are very different depending on histological subtype.

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- In our study, 70% of appendiceal neoplasms are incidentally discovered during surgery or on appendicectomy specimen.
- Evolution and prognosis are very different depending on histological subtype.

=> Treatment is also very different.

DISCUSSION

1. Neuroendocrine tumor of appendix

- Young patient, average age of 40 years in literature and in our study.
- Female dominated sex ratio in literature but 1:1 in our study.
- **Good prognosis** with recurrence free-survival of 100%.

DISCUSSION

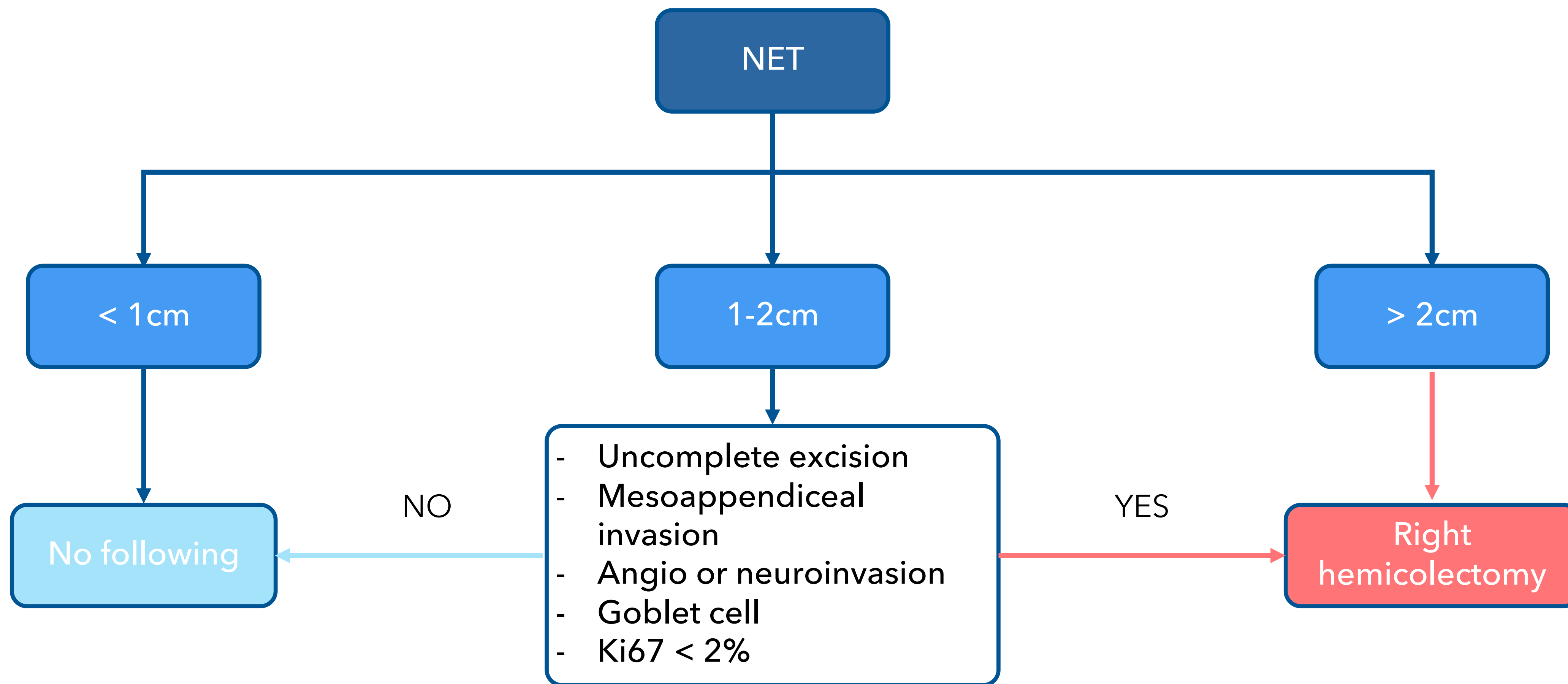
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=> Which treatment after appendicectomy ?

DISCUSSION

1. Neuroendocrine tumor of appendix : treatment after appendicectomy



DISCUSSION

2. Non invasive appendiceal neoplasms (LAMN and HAMN)

- Average age of 65 years in literature and in our study.
- Sex ratio of 1:1.
- Good prognosis with appropriated treatment.

DISCUSSION

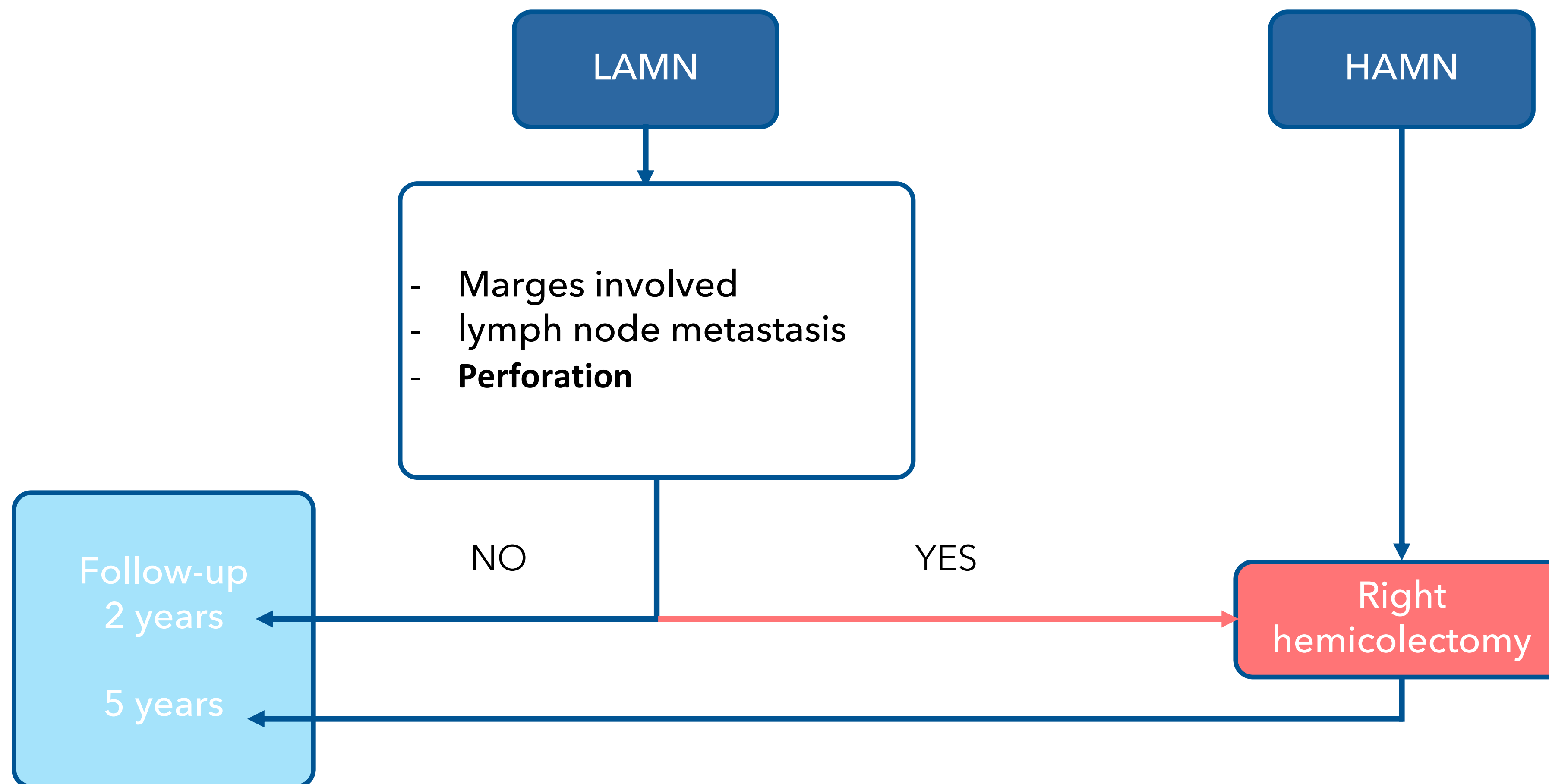
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=> Which treatment after appendicectomy ?

DISCUSSION

2. Non invasive appendiceal neoplasms (LAMN and HAMN) : treatment



DISCUSSION

3. Adenocarcinoma of appendix

- Average age of 65 years in literature and in our study.
- Sex ratio of 1:1.
- **Poor prognosis.**

DISCUSSION

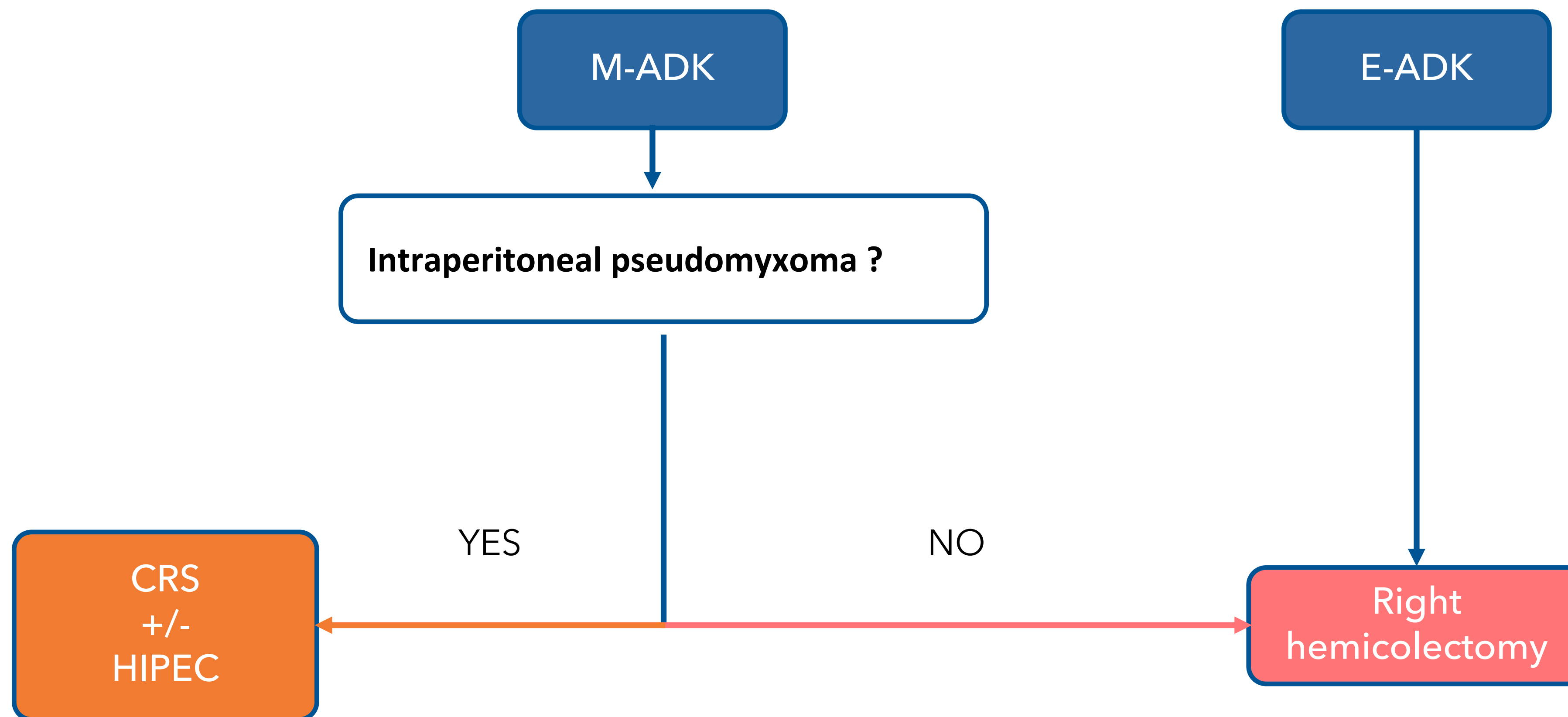
3. Adenocarcinoma of appendix

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- Sex ratio of 1:1.
- **Poor prognosis.**

=> Which treatment after appendicectomy ?

DISCUSSION

3. Adenocarcinoma of appendix : treatment after appendectomy



DISCUSSION

3. Adenocarcinoma of appendix :

Chemotherapy indications :

- 5-fluorouracil-based systemic chemotherapy.
- For adenocarcinoma or HAMN if peritoneal disease or nodal metastasis.
- No consensus for the best perioperative timing.

TAKE HOME MESSAGE

- **During appendicectomy : careful !**
 - Always remove the mesoappendiceal.
 - Perform careful dissection to avoid iatrogenic rupture of the appendix.
 - Convert in open surgery if necessary.
- **Don't forget to look at the histological results !**
 - NET and LAMN have good prognosis.
 - Adenocarcinoma have poor prognosis.

QUESTIONS



QUESTIONS

- **Appendiceal neuroendocrine tumors are more often found in young men.**
 1. True
 2. False

QUESTIONS

- Appendiceal neuroendocrine tumors are more often found in young **women**.
 1. True
 2. **False**

QUESTIONS

- **Chemotherapy has not proven significant benefits for low grade appendiceal tumors.**
 1. True
 2. False

QUESTIONS

- **Chemotherapy has not proven significant benefits for low grade appendiceal tumors.**
 1. **True**
 2. False

QUESTIONS

- **Enteric adenocarcinomas with peritoneal invasion require treatment by CRS and HIPEC.**
 1. True
 2. False

QUESTIONS

- **Mucinous** adenocarcinomas with peritoneal invasion require treatment by CRS and HIPEC.
 1. True
 2. **False**

QUESTIONS

- **LAMN are a non invasive tumors of the appendix. With this histology, none extra-appendicular disease can be find.**
 1. True
 2. False

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QUESTIONS

- **Neuroendocrine tumors of the appendix of less than 1cm and without histological signs of severity do not need follow-up after an appendicectomy.**

1. True
2. False

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1. **True**

2. False

Thank you for your attention !

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