Samedi 13 mai 2023
19ème JOURNÉE DE GASTRO-ENTEROLOGIE
DE l'HOPITAL COCHIN
(APHP.Centre Université Paris Cité)

ASSISTANCE PUBLIQUE HÔPITAUX DE PARIS

Université Paris Cité

AP-HP. Centre Université de Paris

Tumeurs neuro endocrines digestives

Romain Coriat

Service de gastroentérologie, d'endoscopie et d'oncologie digestive

CHU Cochin

romain.coriat@aphp.fr

1 entité particulière

• Les TNE de l'appendice

Registre épidemiologique Nord-Americain (SEER)
les TNE digestives les plus fréquentes sont celles développées aux dépens de l'intestin grele ou du rectum

Taux d'incidence normalise selon l'Age

Intestin grêle 1,2/100 000/an

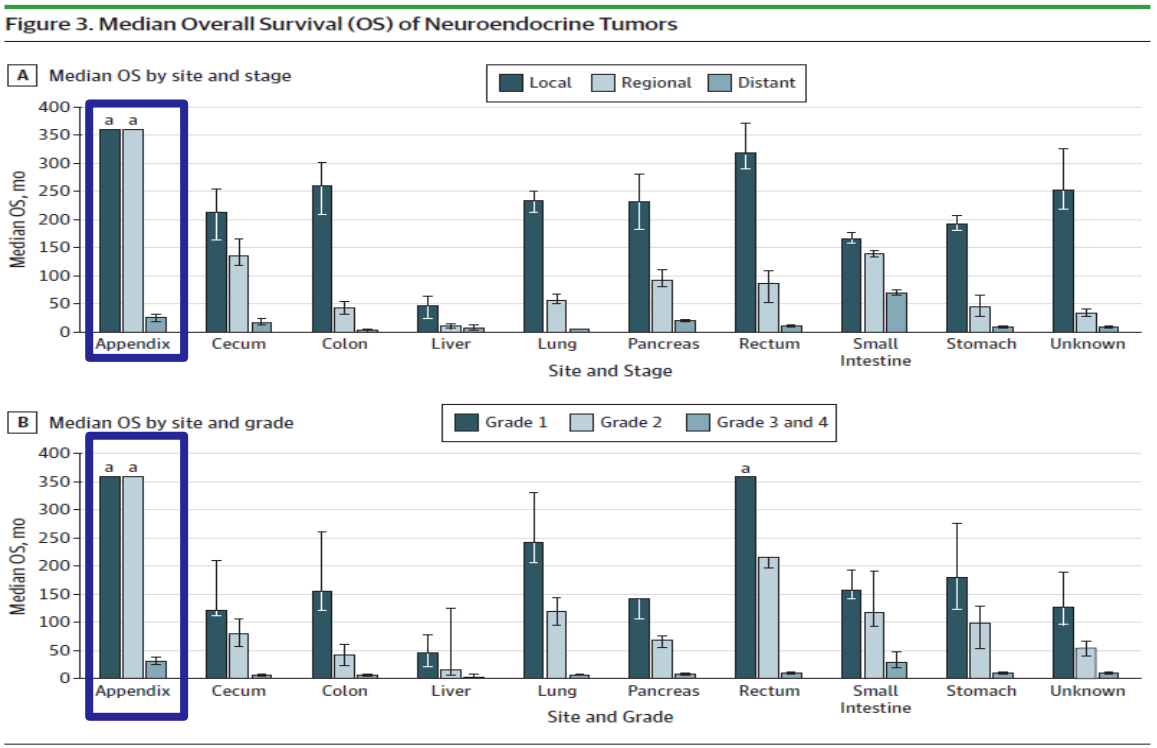
Rectum 1,2/100 000/an

Pancréas 0,8/100 000/an

Estomac 0,4/100 000/an

Appendice 0,4/100 000/an

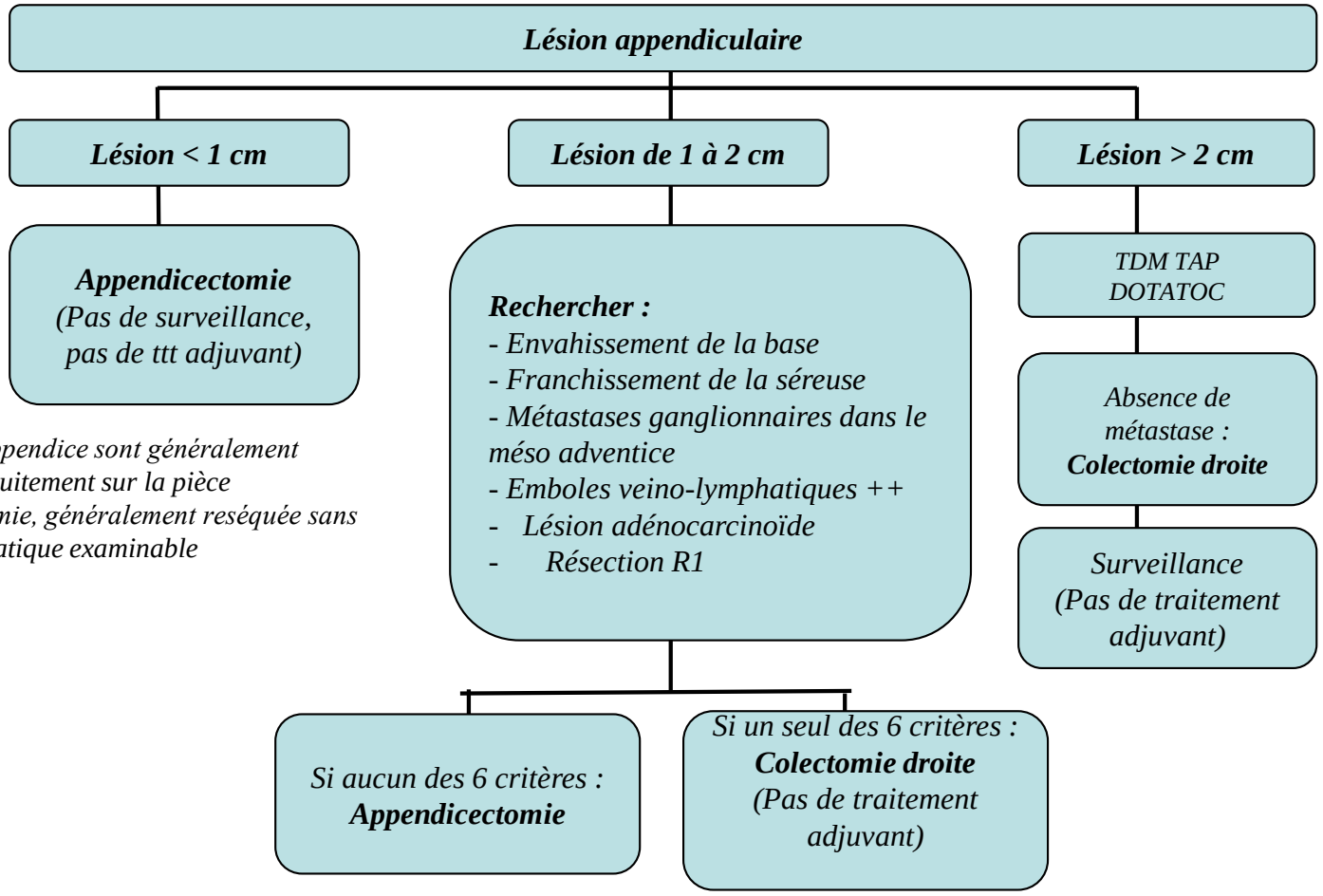
En France: 300 cas par an



Dasari et al, 2017 – De Mestier L, Lepage C, Baudin E, Coriat R,al, French intergroup practice guidelines Dig Liv Dis 2020.

1 entité particulière

• Les TNE de l'appendice



Les TNE de l'appendice sont généralement découvertes fortuitement sur la pièce d'appendicectomie, généralement reséquée sans ganglion lymphatique examinable

Les métastases à distance sont exceptionnelles.

Rault-Petit, Annals of Surgery 2018, NANETS 2010

•Referentiel de prise en charge Hopital Cochin .

Les TNE de l'appendice

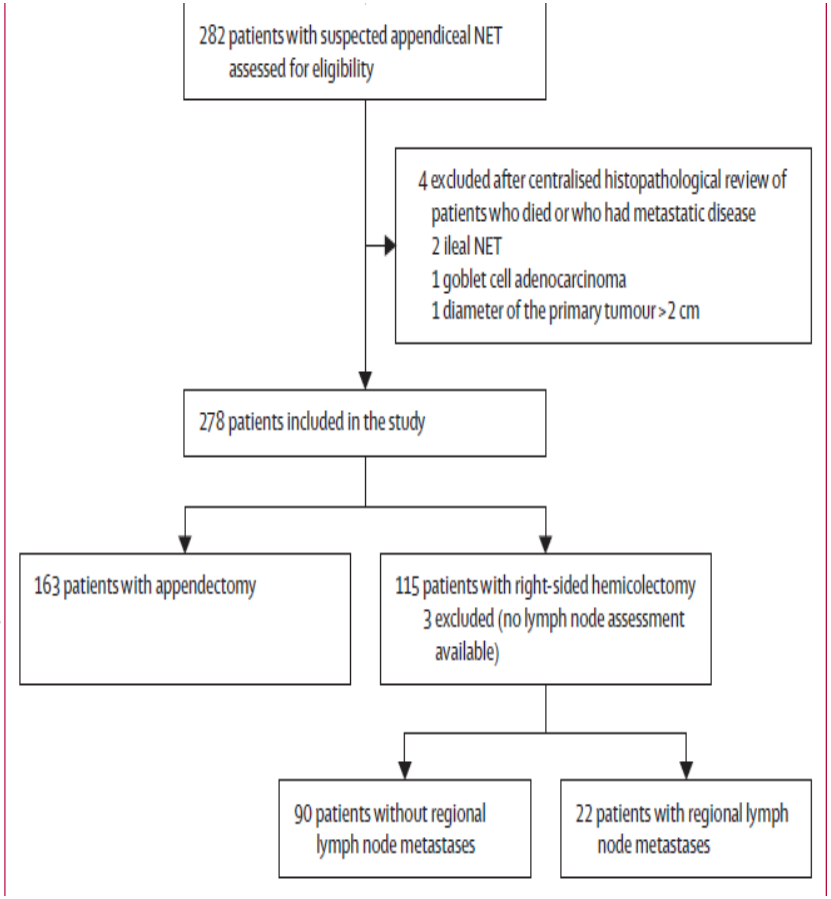
Hemicolectomy versus appendectomy for patients with appendiceal neuroendocrine tumours 1–2 cm in size: a retrospective, Europe-wide, pooled cohort study

Cohorte rétrospective
40 hôpitaux (15 pays européens)
TNE de l'appendice

Taille : 1 à 2 cm
Résection R0

Période : Janvier 2000 – Décembre 2010

Patients : Appendicectomie +/- Colectomie droite complémentaire



Nesti et al, Lancet 2023

Les TNE de l'appendice

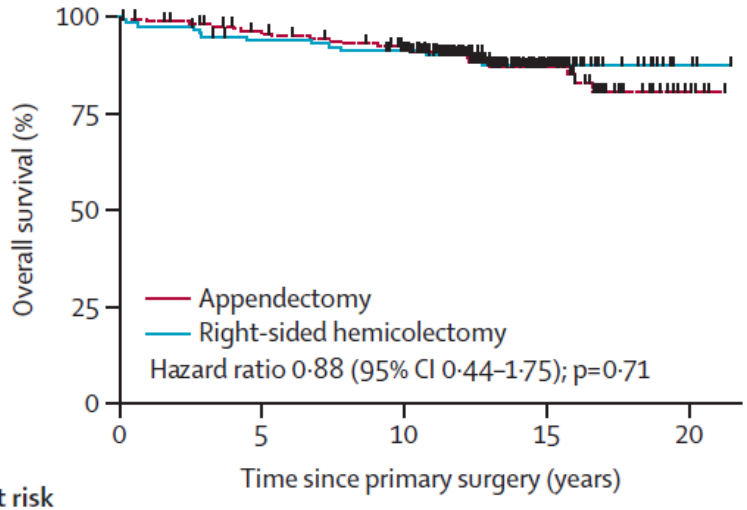
TNE de l'appendice
Taille : 1 à 2 cm
Résection R0

	Appendectomy (n=163)	Right-sided hemicolectomy (n=115)	p value
Demographic characteristics			
Age at initial surgery, years	36·2 (18·4)	35·9 (17·9)	0·90
Sex			
Male	71 (44%)	39 (34%)	0·11
Female	92 (56%)	76 (66%)	..
Histopathological features			
Tumour location			
Tip or middle	144 (88%)	83 (72%)	0·0026
Base	11 (7%)	17 (15%)	..
Not available	8 (5%)	15 (13%)	..
Tumour grade			
Grade 1	142 (87%)	93 (81%)	0·36
Grade 2	12 (7%)	13 (11%)	..
Not available	9 (6%)	9 (8%)	..
Resection margin			
R0	156 (96%)	96 (83%)	0·0001
R1	1 (1%)	15 (13%)	..
Not available	6 (4%)	4 (3%)	..
Lymphovascular invasion			
Yes	28 (17%)	33 (29%)	0·073
No	119 (73%)	72 (63%)	..
Not available	16 (10%)	10 (9%)	..
Mesoappendix infiltration			
≤3 mm	42 (26%)	38 (33%)	0·10
>3 mm	13 (8%)	15 (13%)	..
Not available	108 (66%)	62 (54%)	..
Tumour size, cm			
1·0–1·5	135 (83%)	86 (75%)	0·10
1·6–2·0	28 (17%)	29 (25%)	..

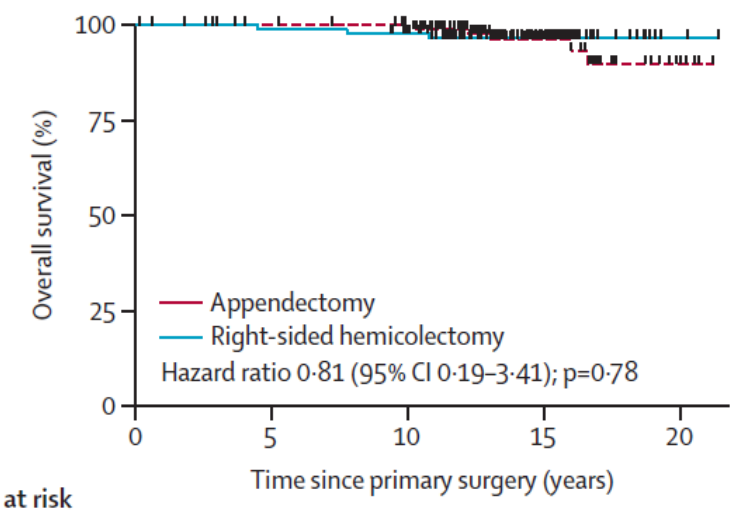
Nesti et al, Lancet 2023

Les TNE de l'appendice

TNE de l'appendice
Taille : 1 à 2 cm
Résection R0



Number at risk (number censored)					
Appendectomy	163 (0)	147 (9)	134 (16)	50 (95)	4 (141)
Right-sided hemicolectomy	115 (0)	105 (3)	96 (9)	38 (65)	3 (101)



Number at risk (number censored)					
Appendectomy	122 (0)	115 (7)	109 (12)	41 (78)	4 (116)
Right-sided hemicolectomy	93 (0)	91 (1)	85 (6)	35 (56)	2 (89)

L'intérêt de la colectomie se discute de plus en plus.

Nesti et al, Lancet 2023

Les TNE de l'appendice chez l'enfant

Contents lists available at ScienceDirect

European Journal of Surgical Oncology

journal homepage: www.ejso.com

Review Article

Management and outcome of high-risk neuroendocrine tumors of the appendix in children; A systematic review

Paul van Amstel [a, b, c, *], Amber Mahieu [a], Roel Bakx [a, b], Ralph de Vries [d], Martine F. Raphael [e], Joep P.M. Derikx [a, b, c], L.W. Ernest van Heurn [a, b, c], Ramon R. Gorter [a, b, c]

[a] Emma Children's Hospital, Amsterdam UMC location, University of Amsterdam, Pediatric Surgery, Meibergdreef 9, Amsterdam, the Netherlands
[b] Amsterdam Reproduction & Development, Amsterdam, the Netherlands
[c] Amsterdam Gastroenterology Endocrinology Metabolism, Amsterdam, the Netherlands
[d] Vrije Universiteit Amsterdam, University Library, Amsterdam, the Netherlands
[e] Emma Children's Hospital, Amsterdam UMC location, University of Amsterdam, Pediatric Oncology, Meibergdreef 9, Amsterdam, the Netherlands

Van Amstel et al, Eur J of Surgical Oncology 2023

Les TNE de l'appendice chez l'enfant

TNE de l'appendice

Table 1
General characteristics.

Author	Study design	Age range (years)	No. of patients	pT1	pT2	pT3	High-risk NETs	Indications for secondary surgery	Intervention group	Control group	Follow-up period (months)
Akova (2018)	Retrospective cohort	10–16	10	4	6	0	4	G2: 3; G2 + MI: 1	0	4	2–89
Bamo (2018)	Retrospective cohort	13–18	8	3	5	0	4	Base: 2; MI: 2	2	2	2–326
Boxberger (2013)	Prospective cohort	4–20	237	165	52	10	21	TS: 10	9	1	0–153
Corpron (1995)	Retrospective cohort	6–19	22	8	5	0	4	MI: 4	1	3	18–360
Dall'Igna (2005)	Retrospective cohort	5–17	14	6	4	0	3	MI + R1: 3	3	0	24–214
De Lambert (2016)	Retrospective cohort	5–17	114	?	?	10	29	MI: 16; TS: 10 LVI: 2; G2: 1	10	19	1–120
Fernandez (2015)	Retrospective cohort	8–17	28	17	10	1	5	MI: 3; LVI: 1; TS: 1	5	0	12–156
Hatzipantelis (2010)	Retrospective cohort	4–13	19	18	1	0	1	MI: 1	0	1	6–118
Henderson (2014)	Retrospective cohort	8–15	27	13	10	0	7	MI: 7	0	7	1–193
Jonsson (1989)	Retrospective cohort	4–15	18	17	1	0	1	MI: 1	0	1	26–351
Kartal (2022)	Retrospective cohort	6–17	15	4	10	1	2	TS: 1, MI: 1	0	2	3–159
Kim (2014)	Retrospective cohort	7–17	13	10	2	1	1	TS: 1	1	0	8–154
Kulkarni (2013)	Retrospective cohort	10–18	7	5	2	0	1	LVI: 1	1[a]	0	1–84
Moertel (1990)	Retrospective cohort	6–20	23	15	3	3	6	LVI: 3; TS: 3	2	4	9–612
Neves (2006)	Retrospective cohort	4–17	8	5	3	0	1	MI: 1	1	0	42
Njere (2018)	Retrospective cohort	8–16	11	6	5	0	2	missing	1	1	1–72
Parikh (2018)	Retrospective cohort	0–19	109	?	?	11	11	TS: 11	8	3	120–312
Pelizzo (2001)	Retrospective cohort	8–18	10	8	0	2	2	TS: 2	2	0	36
Pérez-Albert (2017)	Retrospective cohort	8–16	17	14	2	0	1	MI + base + R1: 1	0	1	4–92
Prommegger (2002)	Retrospective cohort	6–16	36	4	4	0	4	Base or MI: 4	0	4	2–360
Ranaweera (2019)	Retrospective cohort	0–18	32	20	7	5	12	TS: 5; missing:7	12	0	1–60
Ryden (1975)	Retrospective cohort	7–14	30	17	1	1	1	TS: 1	0	1	24–288
Scott (2011)	Retrospective cohort	7–15	47	21	14	2	2	TS: 2	1	1	?
Sommer (2019)	Retrospective cohort	5–16	40	31	5	1	2	R1: 1; TS: 1	1	1	0–158
Spunt (2000)	Retrospective cohort	8–15	5	1	3	0	2	R1 + MI: 2	2	0	6–244
Vandevelde (2015)	Retrospective cohort	9–15	21	15	5	0	4	LVI: 2; MI + LVI: 1; MI: 1	0	4	0–6
Virgone (2014)	Prospective cohort	0.75–17	113	?	?	5	5	TS: 5	1	4	1–151
Wu (2017)	Retrospective cohort	6–17	45	30	5	0	5	MI: 2; missing: 3	1	4	1–150
Yalcin (2022)	Retrospective cohort	7–16	33	19	5	2	2	TS: 2	0	2	5–227

MI: Mesoappendiceal invasion; LVI: lymphovascular invasion; TS: Tumor size; R1: Positive resection margin.
[a] Primary surgery was a total colectomy for familial adenomatous polyposis (FAP).

Van Amstel et al, Eur J of Surgical Oncology 2023

Les TNE de l'appendice chez l'enfant

TNE de l'appendice

Table 1
General characteristics.

Author	Study design	Age range	No. of	pT1	pT2	pT3	High-risk	Indications for secondary	Intervention	Control	Follow-up period

ABSTRACT

This study systematically reviewed the literature to investigate the value of secondary surgery for children with a high-risk neuroendocrine tumor (NET) of appendix. A systematic search was performed in PubMed, Embase and Web of Science. All randomized controlled trials, cohort studies, and case series reporting on the management and outcomes of patients (<20 years) with a histopathologically proven NET of the appendix were eligible for inclusion. Two authors independently selected eligible articles, assessed risk of bias, and extracted data. The outcomes of patients with a high-risk NET treated with secondary surgery were compared to those treated without secondary surgery. Primary outcomes were recurrence rate and disease-free survival. The literature search yielded 667 articles, of which 29 were included. These studies reported on 1112 patients, of whom 145 (13%) had high-risk NET. Heterogeneity between studies was large and risk of bias was serious in 26 and moderate in three studies. Secondary surgery after primary appendectomy was performed in 64 of 145 patients (44%). Length of follow-up ranged between 0 and 612 months. In both treatment groups no recurrences were reported, and thus disease-free survival was 100%. Based on current literature, the value of secondary surgery for pediatric high-risk NET of the appendix may be questioned. However, evidence is scarce, of low-quality, and heterogeneity between studies is large. Large international studies with adequate follow-up are needed to generate high-quality evidence on this topic.

Vandevelde (2015)	Retrospective cohort	9–15	21	15	5	0	4	LVI: 2; MI + LVI: 1; MI: 1	0	4	0–6
Virgone (2014)	Prospective cohort	0.75–17	113	?	?	5	5	TS: 5	1	4	1–151
Wu (2017)	Retrospective cohort	6–17	45	30	5	0	5	MI: 2; missing: 3	1	4	1–150
Yalcin (2022)	Retrospective cohort	7–16	33	19	5	2	2	TS: 2	0	2	5–227

MI: Mesoappendiceal invasion; LVI: lymphovascular invasion; TS: Tumor size; R1: Positive resection margin.
[a] Primary surgery was a total colectomy for familial adenomatous polyposis (FAP).

Van Amstel et al, Eur J of Surgical Oncology 2023

Les TNE de l'appendice chez l'enfant

TNE de l'appendice

Table 1
General characteristics.

Author	Study design	Age range	No. of	pT1	pT2	pT3	High-risk	Indications for secondary	Intervention	Control	Follow-up period

A B S T R A C T

This study systematically reviewed the literature to investigate the value of secondary surgery for children with a high-risk neuroendocrine tumor (NET) of appendix. A systematic search was performed in PubMed, Embase and Web of Science. All randomized controlled trials, cohort studies, and case series reporting on the management and outcomes of patients (<20 years) with a histopath[illegible]ven NET of the appendix were eligible for inclusion. Two authors indep[illegible]les, assessed risk of bias, and extracted data. The outc[illegible]ith secondary surgery were compared t[illegible]ere recurrence rate and [illegible]re [illegible]ty [illegible]y [illegible]o [illegible]thus [illegible]y surgery for pediatric [illegible]idence is scarce, of low-quality, and [illegible]national studies with adequate follow-up are needed [illegible]ce on this topic.

neuroendocrine carcinomas have been included in these studies on adult populations, leading to worse outcomes. Nonetheless, in current literature no recurrences have been reported and disease-free survival seems to be 100% in the pediatric population. Therefore the clinical course of NETs of the appendix seems to be more benign in children compared to the adult population, although

Vandevelde (2015)	Retrospective cohort	9–15	21	15	5	0	4	LVI: 2; MI + LVI: 1; MI: 1	0	4	0–6
Virgone (2014)	Prospective cohort	0.75–17	113	?	?	5	5	TS: 5	1	4	1–151
Wu (2017)	Retrospective cohort	6–17	45	30	5	0	5	MI: 2; missing: 3	1	4	1–150
Yalcin (2022)	Retrospective cohort	7–16	33	19	5	2	2	TS: 2	0	2	5–227

MI: Mesoappendiceal invasion; LVI: lymphovascular invasion; TS: Tumor size; R1: Positive resection margin.
[a] Primary surgery was a total colectomy for familial adenomatous polyposis (FAP).

Van Amstel et al, Eur J of Surgical Oncology 2023

Les TNE de l'appendice

• En cas de doute

Chapitre : 11
Néoplasies Neuroendocrines (NNE) digestives

Date de cette version :
17/03/2020

Date de dernière mise à jour à vérifier sur www.tncd.org ou www.snfge.org

GROUPE DE TRAVAIL : G. Cadiot (Reims), coordonnateur,

• Dans les TNE de l'appendice: Les points à connaître

- *Tumeur très peu agressive*
- *Souvent avec un diagnostic a posteriori chez un patient jeune (mineur)*
- *Besoin d'une analyse anapath avec les 6 critères*

(*Envahissement de la base? Franchissement de la séreuse? Emboles veineux? Emboles lymphatiques ++? Lésion adénocarcinoïde? Résection R1)*

- *Pas d'indication à une surveillance si taille < 1 cm*
- *L'indication de colectomie complémentaire doit de plus en plus se discuter et se faire de moins en moins.*