

Supplementary Table 1 Twenty-four cases of thyroid metastases from colorectal cancer, the previously reported cases in the literature (part 1)

Case number	1	2	3	4	5	6
Ref.	Lester <i>et al</i> ^[8] , 1986	Nachti gal <i>et al</i> ^[9] , 1992	Mesko <i>et al</i> ^[10] , 1996	<i>et Takashima et al</i> ^[11] , 1998	Kim <i>et al</i> ^[12] , 1999	Ridder <i>et al</i> ^[13] , 2001
Age (year)/sex	55/F	69/F	59/F	82/M	68/F	75/F
Primary site	Ascending colon	Sigmoid	Rectum	Rectum	Sigmoid	Sigmoid
Histology	AC	AC	AC	AC	AC	AC
Treatment	Surgery	Surgery	Surgery+ chemotherapy+ radiotherapy	Surgery	Surgery	Surgery
Site of thyroid metastasis	Bilateral	Bilateral	Right	Left	Bilateral	Multinodular
FNA of thyroid lesion	No	Yes	Yes	Yes	Yes	No
FNA	/	Not	Revealed	Metastatic	A poorly	/

results		diagno	carcinoma	adenocarci	differenti	
		stic	cells with	noma	ated	
		becaus	vacuolated	consistent	carcinom	
		e of a	cytoplasm	with	a a	
		lack of		colonic		
		materia		origin		
		l				
Needle	No	No	No	No	No	No
track						
seeding						
CEA	NA	NA	Elevated,	NA	NA	Elevated,
levels			132 ug/L			21 ng/ml
			(normal <			(normal
			5.0 µg/L)			< 5.0
						µg/L)
Time	30	96	20	24	28	84
from						
primary						
lesion						
diagnosis						
(months)						
Clinical	Found	Enlargi	Found on	Enlarging	Enlargin	Dyspnea
manifesta	on	ng neck	follow-up	neck mass	g neck	
tion	follow-	mass +			mass	
	up	hoarse				
		ness				

Supplementary Table 2 Twenty-four cases of thyroid metastases from colorectal cancer, the previously reported cases in the literature (part 1)-continue

Case number	1	2	3	4	5	6
Treatment	Surgery	Palliative Surgery	Surgery+ chemotherapy	N A	Palliative Surgery plus radiotherapy	Surgery+ radiotherapy
Other organs with metastasis	Liver	Lung	Bone+ kidney	N A	Lung	None
Time from primary lesion diagnosis (months)	9	72	20	N A	Synchronous	Unknown
Treatment	Surgery	Surgery	Radiotherapy+ Chemotherapy	N A	Supportive treatment	Unknown
Follow-up (month)	NA	8, DOD	1, AWD	N A	6, DOD	12, DOD

Cause of death	NA	Multiple metastases in the lung, vertebrae, and ribs	/	N	Multiple metastases in the lung and thyroid	Tumor relapse in the thyroid and leading to suffocation
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CRC: Colorectal cancer; AC: Adenocarcinoma; FNA: Fine-needle aspiration; CEA: Carcinoembryonic antigen; NA: Not available; AWD: Alive with disease; DOD: Dead of disease.

Supplementary Table 3 Twenty-four cases of thyroid metastases from CRC, the previously reported cases in the literature (part 2)

Case number	7	8	9	10	11	12
Ref.	Akimaru <i>et al</i> ^[14] , 2002	Fujita <i>et al</i> ^[15] , 2004	Poon <i>et al</i> ^[16] , 2004	Poon <i>et al</i> ^[16] , 2004	Kumamoto <i>et al</i> ^[17] , 2006	Cheung <i>et al</i> ^[18] , 2008
Age (year)/sex	67/M	28/F	64/M	53/F	66/F	50/F
Primary site	Ascending colon	Rectum	Ascending colon	Sigmoid	Ascending colon	Rectum
Histology	AC	AC	AC	AC	AC	AC
Treatment	Surgery	Surgery + chemotherapy	Surgery + Chemotherapy	Surgery + chemotherapy	Surgery + chemotherapy	Surgery + chemotherapy + radiation
Site of thyroid metastasis	Left	Left	Bilateral	Bilateral	Left	Right
FNA of thyroid lesion	Yes	Yes	Yes	No	Yes	Yes
FNA results	Thyroid metastasis	Class adenocarcinoma	V Confirmed	/	Suggesting	Consistent

	is from	cinoma	metastati		metastasi	with
	the		c colonic		s from	metasta
	colonic		adenocar		the colon	tic
	adenoca		cinoma		cancer	adenoc
	rcinoma					arcino
						ma
Needle	No	No	No	No	No	No
track						
seeding						
CEA	Elevated	NA	Elevated,	NA	Elevated,	Elevate
levels	, 10.9ug/L		8.9ug/L		16.0ug/L	d, 5.1
	(normal < 5.0 µg/L)		(normal < 5.0 µg/L)		(normal < 5.0 µg/L)	µg/L
						(norma
						l < 4.0
						µg/L)
Time	72	Synchron	12	Synchron	42	64
from		ous		ous		
primary						
lesion						
diagnosis						
(months)						
Clinical	Enlargin	Dysphagi	Dyspnea,	Enlargin	Enlarging	Enlargi
manifest	g neck	a	dysphagi	g neck	neck	ng
ation	mass,		a	mass,	mass	neck
	hoarse			dyspnea,		mass
	voice			dysphagi		
				a		

Supplementary Table 4 Twenty-four cases of thyroid metastases from CRC, the previously reported cases in the literature (part 2)-continue

Case number	7	8	9	10	11	12
Treatment	Chemotherapy	Surgery+ chemotherapy	Chemotherapy	Surgery+ chemotherapy	Surgery + chemotherapy	Chemotherapy
Other organs with metastasis	Lung + brain	Lung	Lung	Lung + liver	Liver	Lung+liver
Time from primary lesion diagnosis (months)	72	Synchronous	14	Synchronous	30	60
Treatment	Chemotherapy	Chemotherapy	Chemotherapy	Chemotherapy	Surgery	Surgery
Follow-up (month)	4, DOD	6, AWD	18, DOD	10, DOD	NA	24, AWD
Cause of death	Widespread malignancy	Widespread malignancy	metastasis in the thyroid and lung	Widespread malignancy	NA	

CRC: Colorectal cancer; AC: Adenocarcinoma; FNA: Fine-needle aspiration;
CEA: Carcinoembryonic antigen; NA: Not available; AWD: Alive with disease;
DOD: Dead of disease.

Supplementary Table 5 Twenty-four cases of thyroid metastases from CRC, the previously reported cases in the literature (part 3)

Case number	13	14	15	16	17	18
Ref.	Cheung <i>et al</i> ^[18] , 2008	Naka mura <i>et al</i> ^[19] , 2011	Goatman <i>et al</i> ^[20] , 2012	<i>et al</i> Froylich <i>et al</i> ^[21] , 2013	Onorati <i>et al</i> ^[22] , 2015	Payande <i>h et al</i> ^[23] , 2016
Age (year)/sex	54/F	58/F	82/M	62/F	51/F	54/M
Primary site	Rectum	Sigmoid	Caecum and rectum	Sigmoid	Colon	Rectum
Histology	AC	AC	AC	AC	AC	AC
Treatment	Surgery + chemoradiation	Surge ry	Surgery	Surgery + Chemora diation	Surgery + chemoth erapy	Surgery
Site of thyroid metastasis	Left	Left	Left	Right	Right	Bilateral
FNA of thyroid lesion	Yes	Yes	Yes	Yes	Yes	Yes
FNA results	Confirmed	Thyro id	Suspicious for papillary cell	Atypical cells	Confirmed	Anaplas tic

	metastatic adenocarcinoma	glandular metastasis from sigmoid colon cancer	carcinoma with THY5 immunohistochemistry	without follicular or papillary differentiation	metastases from CRC	thyroid malignancy
Needle track seeding	No	No	No	No	No	No
CEA level	Elevated, 6 µg/L (normal < 5.0 µg/L)	NA	NA	NA	Normal	Elevated, 9.8 ng/ml (normal 1.0 to 5.5 ng/ml)

Supplementary Table 6 Twenty-four cases of thyroid metastases from CRC, the previously reported cases in the literature (part 3)-continue

Case number	13	14	15	16	17	18
Time from primary lesion diagnosis (months)	60	96	60	60	26	9
Clinical manifestation	Dry cough, hoarse voice	Found on follow-up	Found on follow-up	Found on follow-up	Enlarging neck mass	Dyspnea
Treatment	Surgery + chemoradiation	Surgery+ Chemotherapy	Surgery	Surgery + chemotherapy	Surgery+ Chemotherapy	Surgery+chemotherapy+Bev
Other organs with metastasis	Lung	Lung	Lung	Lung	No	Lung
Time from primary	12	60	60	57	/	9

y lesion
 diagnos
 is
 (month
 s)

Treatm ent	Surgery + chemoth erapy	Surgery	Surgery	Surgery + radiothe rapy	/	chemothe rapy+Bev
Follow- up (month)	42, DOD	1, AWD	1, AWD	24, AWD	18, AWD	6, AWD
Cause of death	Tumor relapse in thyroid and lung	NA	NA			

CRC: Colorectal cancer; AC: Adenocarcinoma; FNA: Fine-needle aspiration;
 CEA: Carcinoembryonic antigen; NA: Not available; AWD: Alive with disease;
 DOD: Dead of disease.

Supplementary Table 7 Twenty-four cases of thyroid metastases from CRC, the previously reported cases in the literature (part 4)

Case number	19	20	21	22	23	24
Ref.	Minami <i>et al</i> ^[24] , 2016	Keranmu <i>et al</i> ^[25] , 2017	Keranmu <i>et al</i> ^[25] , 2017	Keranmu <i>et al</i> ^[25] , 2017	Keranmu <i>et al</i> ^[25] , 2017	Sakaleshpura <i>et al</i> ^[26] , 2020
Age (year)/sex	61/F	54/M	36/F	45/M	44/F	57/M
Primary site	Sigmoid	Rectum	Ascending colon	Rectum	Descending colon	Rectal
histology	AC	AC	AC	AC	AC	AC
treatment	Surgery	Surgery + chemotherapy	Chemotherapy	Surgery + chemotherapy	Surgery + chemotherapy	Neoadjuvant chemoradiation + Surgery
Site of thyroid metastasis	Bilateral	Bilateral	Left	Left	Left	Left
FNA of thyroid lesion	Yes	Yes	Yes	Yes	No	Yes
FNA results	Suggesting	Confirmed	Confirmed	Confirmed	/	Metastatic colorectal

	malignancy	metastases from CRC	metastases from CRC	metastases from CRC		cancer
Needle seeding	No	No	No	No	No	No
Level of CEA	Elevated, 9.8 ng/ml (normal < 5.0 µg/L)	NA	NA	NA	NA	NA
Time from primary lesion diagnosis (months)	60	24	4	66	28	48
Clinical manifestation	Hoarseness and enlarging neck mass	Found on follow-up	Enlarging neck mass	Found on follow-up	Found on follow-up	Enlarging neck mass

Supplementary Table 8 Twenty-four cases of thyroid metastases from CRC, the previously reported cases in the literature (part 4)-continue

Case number	19	20	21	22	23	24
Treatment	Surgery + chemotherapy	Surgery	Chemotherapy	Surgery + chemotherapy	Surgery + chemotherapy	Radiotherapy
Other organs with metastases	Lung + liver	Lung	Lung +liver	Lung + mediastinum + adrenal	Lung + liver	Liver+lung + adrenal+others
Time from primary lesion diagnosis (months)	20 (lung), liver (53)	19	Synchronous (liver), 7(lung)	40(lung), 55(adrenal)	10(ovary) , 17(lung)	Synchronous
Treatment	Surgery + chemotherapy	Surgery	chemotherapy	chemotherapy	Surgery +chemotherapy	NA
Follow-up (month)	24, AWD	5, AWD	5, DOD	27, AWD	5, AWD	NA
Cause of death			Widespread malignant			NA

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CRC: Colorectal cancer; AC: Adenocarcinoma; FNA: Fine-needle aspiration;
CEA: Carcinoembryonic antigen; NA: Not available; AWD: Alive with disease;
DOD: Dead of disease.