

Table 1. Cases of occult papillary thyroid carcinoma initially presenting as lymph node metastases (case reports or case series)

Ref	No of patients	Age	Gender	Primary thyroid focus	Maximum diameter (mm)	Clinically apparent LN	Clinically apparent LN location	Thyroid U/S	Thyroid CT or MRI	Node FNB	Diagnosis establishment
*Clinberg ²⁸	1	70	M	UF	40	1LN	NA	NA	NA	n-Mal	LN-HIST
Tovi ⁴⁸	4	26-48	4/4 F	1/4 UF ipsi 3/4 MF bil	5-10	4/4 1LN	1/4 ipsi	4/4 NA	4/4 NA	4/4 NA	4/4 LN-HIST
*Naruse ⁴⁹	9	29-68	4/9 M 5/9 F	9/9 UF	3-12	5/9 1LN 2/9 2LN 1/9 3LN 1/9 4LN	9/9 ipsi	9/9 NA	9/9 NA	9/9 NA	2/9 LN-HIST 7/9 LN & thyr-HIST
*Wallace ⁵⁰	4	32-62	3/4 M 1/4 F	1/4 UF 1/4 MF 1/4 MF bil 1/4 NA	1/4 <10 3/4 >10	4/4 1LN	1/4 ipsi	4/4 NA	4/4 NA	1/4 n-Mal 3/4 NA	4/4 LN-HIST
Maceri ¹⁴	2	48-61	1/2 M 1/2 F	1/2 UF 1/2 MF bil	2/2 NA	1/2 1LN	1/2 ipsi	2/2 NA	2/2 NA	1/2 ep-Mal 1/2 NA	2/2 LN-HIST
Allo ⁵¹	6	32-48	3/6 M 3/6 F	4/6 UF 2/6 MF bil	3-11	5/6 1LN 1/6 2LN	2/6 ipsi 2/6 NA	1/6 neg 5/6 NA	6/6 NA	1/6 thyr-Mal 5/6 NA	1/6 LN-FNB 5/6 LN-HIST
*Park ⁵²	24	10-77	9/24 M 15/24 F	15/24 UF 9/24 MF (4/24 bil)	3-24	20/24 1LN 2/24 2LN 1/24 3LN 1/24 4LN	NA	6/24 sug 10/24 neg 8/24 NA	24/24 NA	NA	NA
†Santini ²⁶	1	36	M						NA		
†Yoshida ⁵³	1	68	F	UF	11	1LN	ipsi				
Levy ⁶	1	43	F	UF	8	1LN	ipsi	NA	NA	no-Diagn	LN-HIST
Loughran ⁷	1	19	M	UF	10	1LN	uni ‡	neg	NA	NA	LN-HIST
Matsuda ³⁶	3	39-51	1/3 M 2/3 F	2/3 UF 1/3 MF uni	3-10	2/3 1LN 1/3 ≥2LN	2/3 ipsi 1/3 bil	3/3 neg	NA	3/3 thyr-Mal	3/3 LN-FNB
*Hwang ¹²	1	37	F	UF	12	1LN	ipsi	NA	NA	n-Mal	LN-HIST
*Attie ³⁵	43	14-72	18/43 M 25/43 F	16/43 UF 16/43 MF uni 11/43 MF bil	29/43 <10 4/43 10-15 5/43 15-20 5/43 >20	27/43 1LN 5/43 2-4LN 11/43 >5LN	NA	NA	NA	NA	NA
McDermott ²⁹	2	31-34	1/2 M 1/2 F	1/2 MF bil 1/2 MF uni	2/2 NA	1/2 2LN 1/2 1LN	1/2 bil 1/2 ipsi	1/2 NA 1/2 sug	2/2 NA	2/2 NA	2/2 LN-HIST
Ahuja ⁵⁴	2	33	1/2 M 1/2 F	2/2 UF	3	2/2 1LN	1/2 ipsi	1/2 sug 1/2 neg	2/2 NA	1/2 n-Mal 1/2 NA	2/2 LN-HIST
Verge ⁵	7	17-54	6/7 M 1/7 F	5/7 UF 1/7 MF bil 1/7 MF uni	2-8	5/7 1LN 2/7 2LN	6/7 ipsi	7/7 neg	7/7 neg (CT)	5/7 thyr-Mal 2/7 n-Mal	5/7 LN-FNB 2/7 LN-HIST

*Coleman ²⁷	14	37.7 (mean)	7/14 M 7/14 F	8/14 UF 2/14 MF uni 4/14 MF bil	4/14 <4 5/14 5-10 5/14 >10	NA	14/14 ipsi	2/14 sug 2/14 neg 10/14 NA	3/14 sug (3CT) 7/14 neg (5CT/ 2MRI) 4/14 NA	5/14 thyr-Mal 1/14 neg 8/14 NA	4/14 LN-FNB 10/14 LN-HIST
MoNAhik ⁸	8	25-39	3/8 M 5/8 F	4/8 UF 3/8 MF 1/8 no tumor	2-9	7/8 1LN 1/8 2LN	NA	NA	NA	NA	8/8 LN-HIST
Nakagawa ⁹	1	38	F	UF	5	1LN	ipsi	sug	neg (CT)	n-Mal	LN-HIST
Mizumachi ¹	8	31-58	5/8 M 3/8 F	3/8 MF uni 4/8 MF bil 1/8 NA	4-15			6/8 sug 1/8 neg 1/8 NA	8/8 NA	1/8 thyr-Mal 3/8 n-Mal 4/8 NA	3/8 FNB-Tg 1/8 LN-FNB 4/8 LN-HIST
Seven ³⁰	4	18-37	2/4 M 2/4 F	3/4 UF 1/4 MF bil	3-8	4/4 1LN	1/4 ipsi 2/4 NA	2/4 sug 1/4 neg 1/4 NA	3/4 neg (CT) 1/4 NA	1/4 thyr-Mal 2/4 neg 1/4 NA	1/4 LN-FNB 3/4 LN-HIST
Chi ¹⁰	2	24 & 38	2/2 M	2/2 UF	5-10	2/2 1LN	1/2 contra 1/2 ipsi	1/2 sug 1/2 mis	1/2 mis (CT) 1/2 NA	1/2 n-Mal 1/2 NA	2/2 LN-HIST
Cunha ³⁹	2	NA	NA	2/2 UF	3-8	2/2 1LN	NA	2/2 neg	2/2 neg	2/2 no-Diagn	2/2 FNB-Tg
Gonzalez-Garcia ¹¹	1	29	M	MF uni	6	1LN	ipsi	NA	neg (CT-MRI)	n-Mal	LN-HIST
Pazaitou- Panayiotou ³⁷	24	16-63	5/24 M 19/24 F	14/24 UF 7/14 MF uni 3/14 MF bil	3-10	NA	NA	14/24 sug 3/24 neg 7/24 NA	24/24 NA	5/24 thyr-Mal 19/24 NA	5/24 LN-FNB 19/24 LN-HIST
Bruno ¹⁶	1	56	F	UF	3	1LN	contra	mis	NA	ep-Mal	FNB-Tg
*Al-Ashaa Y ⁴¹	5	21-64	2/5 M 3/5 F	3/5 UF 2/5 MF bil	8-17	5/5 NA	5/5 NA	2/5 sug 1/5 neg 2/5 NA	1/5 sug (CT) 3/5 neg (2CT / 1MRI) 1/5 NA	3/5 thyr-Mal 2/5 neg	3/5 LN-FNB 2/5 LN-HIST
Present case	1	41	F	MF bil	2-5	1LN		neg	neg (CT & MRI)	ep-Mal	FNB-ICC & LN-HIST
Total	183	38.7	77 M (43%) 104 F (57%)	90 UF (53%) 81 MF (47%) [38 uni (49%) – 40 bil (51%) – 3 NA]	8 (2-40)	101 1LN (84%) 12 2LN (10%) 4 3LN (3%) 3 4LN (3%)	46 ipsi (92%) 2 contra (4%) 2 bil (4%)	31 sug (45%) 2 mis (3%) 36 neg (52%)	4 sug (12%) 1 mis (3%) 29 neg (85%)	23 thyr-Mal (48%) 3 ep-Mal (6%) 17 n-Mal (35%) 5 no-Diagn (11%)	85 LN-HIST (75%) 23 LN-FNB (20%) 5 FNB-Tg (4%) 1 FNB-ICC (1%)
Total in primary focus <10mm	83	38.2	34 M (42%) 47 F (58%)	42 UF (57%) 32 MF (43%) [13 uni (45%) – 16 bil (55%) – 3 NA]	7 (2-10)	44 1LN (83%) 7 2LN (13%) 1 3LN (2%) 1 4LN (2%)	26 ipsi (86%) 2 contra (7%) 2 bil (7%)	24 sug (51%) 2 mis (4%) 21 neg (45%)	1 mis (5%) 18 neg (95%)	16 thyr-Mal (50%) 2 ep-Mal (6%) 10 n-Mal 31%) 4 no-Diagn (13%)	62 LN-HIST (75%) 16 LN-FNB (19%) 4 FNB-Tg (5%) 1 FNB-ICC (1%)

Ref: references; No: number; LN: lymph node; U/S: ultrasound; CT: computed tomography; MRI: Magnetic Resonance Imaging; FNB: fine-needle aspiration biopsy; M: male; F: female; UF: unifocal; MF: multifocal; ipsi: ipsilateral; contra: contralateral; uni: unilateral; bil: bilateral; NA: not applicable; sug: suggestive; mis: misleading; neg: negative; no-Diagn: non-diagnostic; n-Mal: non-malignant; thyr-Mal: thyroid malignancy; ep-Mal: malignancy of epithelial origin; HIST: histology; FNB-Tg: washout liquid of the FNB needle; FNB-ICC: FNB immunocytochemistry.

* Thyroid papillary carcinomas reported as occult by the authors, but exceeding 10mm in maximum diameter. (Occult thyroid carcinoma, was previously defined as smaller than 15 mm in maximum diameter; furthermore, some authors reported as occult even greater carcinomas, when not clinically evident at presentation).

‡ The primary focus was in the thyroid isthmus.

† Details about the case/s could not be obtained due to language barrier or unavailability of the paper, mostly due to antiquity and failure to contact the authors and retrieve missing information.