



**SUPPLEMENTAL FIGURE 1.** PET/CT scans with the  $^{18}\text{F}$ -FDG (A) and  $^{68}\text{Ga}$ -FAPI (B) in a 54-year-old male patient (patient 7) with metastatic squamous cell carcinoma (SCC) of the right neck.  $^{18}\text{F}$ -FDG-PET/CT was negative for the detection of the primary. On  $^{68}\text{Ga}$ -FAPI-PET/CT, there was a moderate uptake in the right sinus piriformis (B, red arrow;  $\text{SUV}_{\text{max}} = 3.60$ ), while low background uptake was seen in the left sinus piriformis ( $\text{SUV}_{\text{max}}$  ratio = 3.27). Subsequent biopsy confirmed SCC. Black and white arrows indicate the metastatic lymph node.

**SUPPLEMENTAL TABLE 1.** Detailed information of primary and metastatic lesions on  $^{18}\text{F}$ -FDG and  $^{68}\text{Ga}$ -FAPI-PET/CT in eighteen patients

Patients No.	Lesion	Location	$^{18}\text{F}$ -FDG			$^{68}\text{Ga}$ -FAPI			
			tSUV <sub>max</sub>	bSUV <sub>mean</sub>	TBR	tSUV <sub>max</sub>	bSUV <sub>mean</sub>	TBR	
1	Primary tumor	Nasopharynx top wall	-	-	-	2.60	1.10	2.36	
	Lymph node	Neck level II B	6.20	1.20	5.17	3.30	1.10	3.00	
	Lymph node	Neck level II A	5.80	1.20	4.83	1.90	1.10	1.73	
	Lymph node	Neck level V A	3.80	1.20	3.17	1.60	1.10	1.45	
2	Primary tumor	Right palatine tonsil	-	-	-	8.30	1.20	6.92	
	Lymph node	Neck level II B	5.90	0.90	6.56	6.80	1.20	5.67	
	Lymph node	Neck level II A	7.20	0.90	8.00	7.40	1.20	6.17	
3	Primary tumor	Right palatine tonsil	-	-	-	11.50	0.70	16.43	
	Lymph node	Neck level II B	9.40	0.90	10.44	15.00	0.70	21.43	
	Lymph node	Neck level II B	6.80	0.90	7.56	13.80	0.70	19.71	
4	Primary tumor	Right submandibular gland	-	-	-	16.50	0.60	27.50	
	Lymph node	Neck level II B	9.90	0.90	11.00	14.10	0.60	23.50	
	Lymph node	Neck level II B	15.80	0.90	17.56	18.70	0.60	31.17	
	Lymph node	Neck level II B	10.70	0.90	11.89	12.40	0.60	20.67	
	Lymph node	Neck level II A	13.60	0.90	15.11	10.00	0.60	16.67	
	Lymph node	Neck level I B	3.90	0.90	4.33	8.60	0.60	14.33	
	Lymph node	Neck level III	8.20	0.90	9.11	8.30	0.60	13.83	
	Lymph node	Neck level IV	8.60	0.90	9.56	7.90	0.60	13.17	
	Lymph node	Chest level 1 R	12.50	0.90	13.89	13.10	0.60	21.83	
	Lymph node	Chest level 1 L	8.30	0.90	9.22	8.20	0.60	13.67	
	Lymph node	Chest level 2 R	12.80	0.90	14.22	15.70	0.60	26.17	
	Lymph node	Chest level 4 R	13.10	0.90	14.56	20.50	0.60	34.17	
	Lymph node	Chest level 5	14.40	0.90	16.00	16.60	0.60	27.67	
	Lymph node	Chest level 6	8.20	0.90	9.11	12.60	0.60	21.00	
	Lymph node	Chest level 7	9.00	0.90	10.00	16.50	0.60	27.50	
	Lymph node	Chest level 10 R	14.10	0.90	15.67	17.80	0.60	29.67	
	Lymph node	Chest level 10 L	9.40	0.90	10.44	18.00	0.60	30.00	
		Bone	Fifth cervical vertebra	8.00	0.90	8.89	18.20	0.60	30.33
	5	Primary tumor	Right submandibular gland	-	-	-	15.80	0.80	19.75

	Lymph node	Neck level II B	1.90	0.80	2.38	12.40	0.80	15.50
	Lymph node	Neck level II A	1.70	0.80	2.13	9.40	0.80	11.75
	Lymph node	Neck level I B	4.50	0.80	5.63	10.40	0.80	13.00
	Lymph node	Neck level III	1.70	0.80	2.13	12.20	0.80	15.25
	Lymph node	Neck level III	2.00	0.80	2.50	6.90	0.80	8.63
	Lymph node	Neck level III	3.80	0.80	4.75	7.00	0.80	8.75
	Lymph node	Neck level IV	3.30	0.80	4.13	10.60	0.80	13.25
	Lymph node	Neck level IV	2.70	0.80	3.38	6.40	0.80	8.00
	Bone	Acetabulum	8.60	0.80	10.75	20.20	0.80	25.25
6	Primary tumor	Hypopharynx posterior wall	-	-	-	3.20	0.90	3.56
	Lymph node	Neck level II A	2.60	0.70	3.71	4.70	0.90	5.22
	Lymph node	Neck level III	8.60	0.70	12.29	6.00	0.90	6.67
7	Primary tumor	Right sinus piriformis	-	-	-	3.60	0.90	4.00
	Lymph node	Neck level III	7.60	0.90	8.44	12.80	0.90	14.22
8	Lymph node	Neck level III	25.60	0.70	36.57	15.20	0.80	19.00
9	Lymph node	Neck level II B	16.80	1.20	14.00	2.60	0.90	2.89
	Lymph node	Neck level V A	17.50	1.20	14.58	5.70	0.90	6.33
	Lymph node	Neck level II A	14.40	1.20	12.00	3.50	0.90	3.89
	Lymph node	Neck level III	14.40	1.20	12.00	3.50	0.90	3.89
10	Lymph node	Neck level II A	7.30	0.80	9.13	3.10	1.20	2.58
11	Lymph node	Neck level II A	17.90	0.80	22.38	7.50	0.70	10.71
	Lymph node	Neck level III	12.80	0.80	16.00	3.70	0.70	5.29
12	Lymph node	Neck level II B	5.10	0.60	8.50	10.00	0.70	14.29
	Lymph node	Neck level II B	15.20	0.60	25.33	2.90	0.70	4.14
	Lymph node	Neck level II A	12.10	0.60	20.17	4.00	0.70	5.71
13	Lymph node	Neck level I B	6.20	0.70	8.86	8.60	0.90	9.56
14	Lymph node	Neck level II B	8.40	0.60	14.00	9.20	0.90	10.22
	Lymph node	Neck level II B	16.90	0.60	28.17	14.70	0.90	16.33
	Lymph node	Neck level III	6.10	0.60	10.17	8.70	0.90	9.67
	Lymph node	Left axillary	4.50	0.60	7.50	5.10	0.90	5.67
	Lymph node	Left axillary	4.90	0.60	8.17	7.10	0.90	7.89
	Lymph node	Left axillary	4.90	0.60	8.17	5.90	0.90	6.56
	Lymph node	Left axillary	4.00	0.60	6.67	4.90	0.90	5.44

	Lymph node	Left axillary	4.80	0.60	8.00	5.20	0.90	5.78
15	Lymph node	Neck level II A	2.10	0.80	2.63	2.90	0.80	3.63
16	Lymph node	Neck level II B	14.20	0.90	15.78	8.10	0.80	10.13
	Lymph node	Neck level II B	13.70	0.90	15.22	13.90	0.80	17.38
	Lymph node	Neck level II B	10.00	0.90	11.11	13.60	0.80	17.00
	Bone	Atlas	7.70	0.90	8.56	4.60	0.80	5.75
	Bone	Sixth cervical vertebra	6.40	0.90	7.11	4.60	0.80	5.75
	Bone	Seventh cervical vertebra	5.20	0.90	5.78	4.10	0.80	5.13
	Bone	Second thoracic vertebra	8.50	0.90	9.44	3.60	0.80	4.50
	Bone	Twelfth thoracic vertebra	6.70	0.90	7.44	4.00	0.80	5.00
	Bone	Second lumbar vertebra	8.40	0.90	9.33	8.10	0.80	10.13
	Bone	Sacrum	14.90	0.90	16.56	18.10	0.80	22.63
	Bone	Right ilium	13.40	0.90	14.89	6.00	0.80	7.50
	Bone	Left ilium	12.00	0.90	13.33	3.90	0.80	4.88
	Bone	Right pubis	10.20	0.90	11.33	4.60	0.80	5.75
	Bone	Left scapula	5.20	0.90	5.78	3.40	0.80	4.25
	Bone	Right scapula	4.70	0.90	5.22	2.40	0.80	3.00
	Bone	Left ninth rib	5.40	0.90	6.00	3.20	0.80	4.00
	Bone	Right eighth rib	7.00	0.90	7.78	6.90	0.80	8.63
	Bone	Right femur	5.50	0.90	6.11	2.40	0.80	3.00
17	Lymph node	Neck level II B	10.20	1.10	9.27	8.10	0.50	16.20
	Lymph node	Neck level II A	8.50	1.10	7.73	7.60	0.50	15.20
	Lymph node	Neck level II A	7.70	1.10	7.00	7.10	0.50	14.20
18	Lymph node	Neck level II B	23.70	1.00	23.70	10.90	0.80	13.63
	Lymph node	Neck level II A	11.20	1.00	11.20	10.20	0.80	12.75
	Lymph node	Neck level II A	6.00	1.00	6.00	5.40	0.80	6.75
	Lymph node	Neck level II B	3.40	1.00	3.40	3.80	0.80	4.75

tSUV<sub>max</sub> = the maximum SUV of tumor lesion; bSUV<sub>mean</sub> = the mean SUV of muscle; TBR = tumor-to-background ratio