



Percutaneous Localization of Small Lung Nodules 彰基經驗

王秉彥醫師
彰化基督教醫院



CHANGHUA CHRISTIAN HOSPITAL

Methods

- Retrospective review in CCH
- 2018/1~2019/8
 - ◆ 2018/7~ : Launched Hybri-OR localization
- Inclusion : Difficult to be identified by thoracoscopic approach
- Surgical indication : as CCH pulmonary nodule consensus

GGN Management Consensus in CCH

Size		Management			
Solid nodule	> 8mm	1. Serial CT surveillance (3m, 6-12m, 12m) 2. PET-CT 3. Nonsurgical biopsy 4. Surgical excision	Unchanged		
			Growing		1. Biopsy or surgical excision 2. CT 3 m 3. PET-CT 4. Chest CT+/-Contrast
	5-8 mm	At 3m, 6m, 12m, and then annual	Unchanged		
			Growing or new		1. CT 3 m 2. Biopsy or surgical excision
	< 5 mm	Annual CT surveillance	Unchanged		
			Growing or new		CT 3 m
Part-solid nodule	>=8mm	1. CT 3m 2. Empiric antibiotics (optional)	Unchanged		1. Nonsurgical biopsy and/or surgical resection 2. Closely F/U 3. PET-CT
	<8mm	1. Serial CT surveillance (3m, 12m, 24m. (5 years) 2. Empiric antibiotics (optional)	Unchanged		
			1. Growing 2. Solid component >50%		1. CT 3m 2. Chest CT+/- Contrast 3. PET-CT 4. Biopsy or surgical excision
Ground-glass nodule	>10 mm	CT 3m	Unchanged		1. Nonsurgical biopsy and/or surgical resection 2. Closely F/U
			Growing or new		1. Biopsy 2. Surgical excision
	5-10 mm	CT 6m	Unchanged		CT 12m
			Growing or new		1. CT 3-6m 2. Surgical excision
	< 5 mm	Annual CT surveillance	Unchanged		CT 12m
			Growing or new		CT 6 m

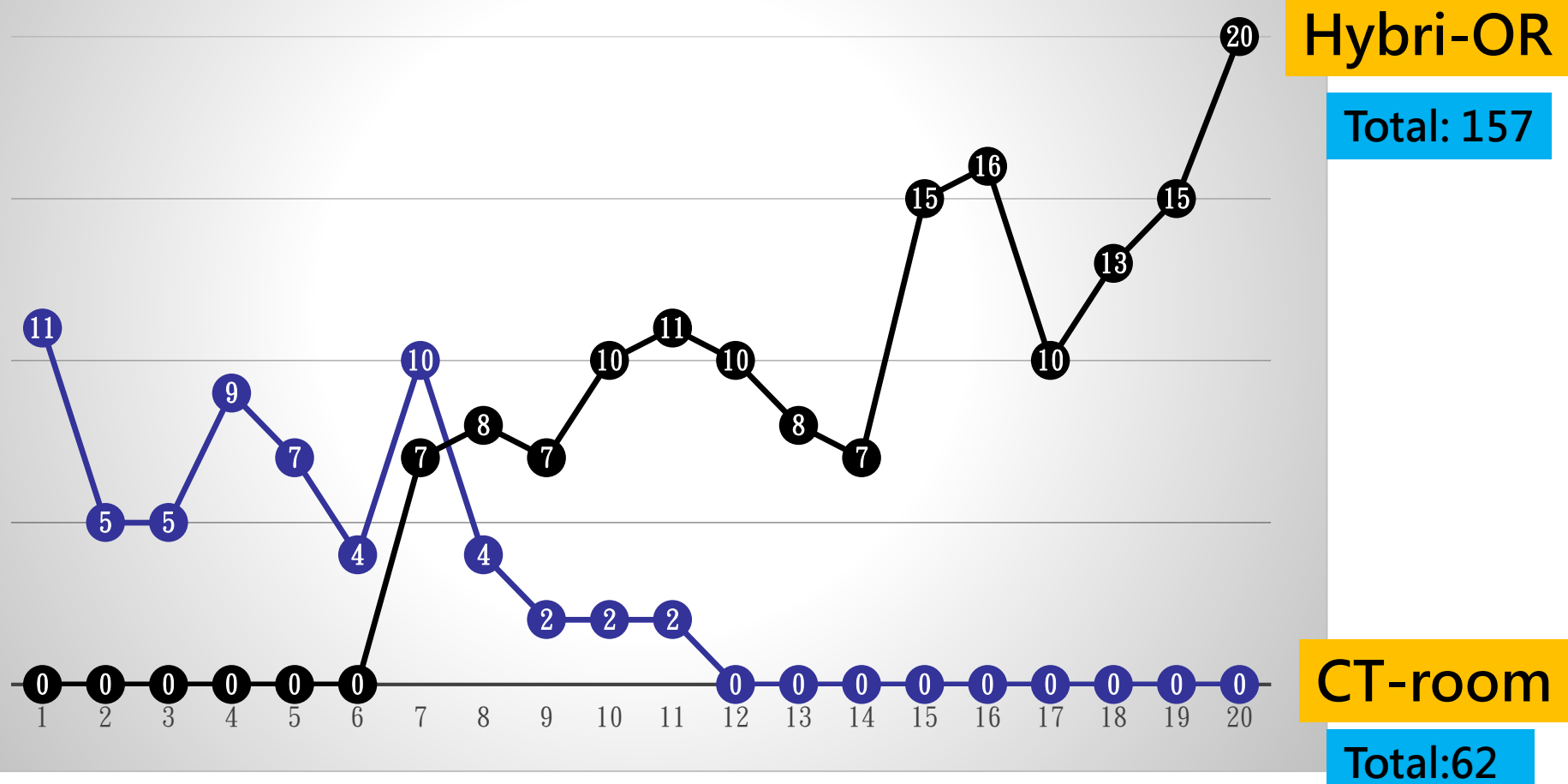


Briefly

- Solid nodule :
 - ◆ >8mm
 - ◆ 5~8mm with growing
- Part-solid nodule :
 - ◆ >8mm,
 - ◆ <8mm with growing
- Ground glass nodule:
 - ◆ >5mm with growing



Cases/month From 2018/01 to 2019/08





0.2ml methyblue + 0.3ml normal saline under 1cm of pleura



Basic data

Variables	CT-Room	Hybri-OR	P Value
Number	62	157	
Age(years)	55.92±10.786	63.23±44.608	0.204
Gender			0.304
Male	21(33.9%)	65(41.4%)	
Female	41(66.1%)	92(58.6%)	
Smoking Status			0.760
Yes	4 (6.5%)	12(7.6%)	
No	58(93.5%)	145(92.4%)	
Comorbidity			0.199
Yes	37(59.7%)	108(68.8%)	
No	25(40.3%)	49(31.2%)	

Basic data

Variables	CT-Room	Hybri-OR	P Value
F/U CT numbers	2.74±2.52	2.79±2.61	0.902
Tumor size	0.98±0.47	1.42±1.26	0.008
C/T ratio	0.23±1.77	0.17±0.30	0.000
Distance to pleura(cm)	1.33±1.69	1.29±1.39	0.835
Tumor location			0.091
RUL	N=16(25.8%)	40(25.5%)	
RML	N=2 (3.2%)	7 (4.5%)	
RLL	N=6 (9.7%)	24(15.3%)	
LUL	N=23(37.1%)	33(21%)	
LLL	N=10(16.1%)	22(14%)	
Both	N=5 (8.1%)	31(19.7%)	

Basic data

Variables	CT-Room	Hybri-OR	P Value
Localization method			0.000
Methy blue	1 (1.6%)	142(91%)	
Coil	59(95.2%)	3 (1.9%)	
Needle	1 (1.6%)	2 (1.3%)	
ICG	0	4 (2.6%)	
Both	1 (1.6%)	5 (3.2%)	
Time from localization to skin incision	355.24±361.99	24.65±12.50	0.000
Complication rate			0.000
no	14(22.6%)	155(98.7%)	
yes	48(77.4%)	2(1.3%)	
Pneumothorax	28(45.2%)	2 (1.3%)	
Hemorrhage	4 (6.5%)	0	
Pneumothorax+ Hemorrhage	16(25.8%)	0	
Successful rate	62/62(100%)	156/157(99.4%)	0.529

Basic data

Variables	CT-Room	Hybri-OR	P Value
Operation methods			0.010
wedge resection	40(64.5%)	115(73.2%)	
segmentectomy	19(30.6%)	19(12.1%)	
lobectomy	2 (3.2%)	9 (5.7%)	
wedge+ lobectomy	0 (0%)	3 (1.9%)	
wedge+segmentectomy	1 (1.6%)	11(7%)	
Operation time(min)	118.00±58.585	121.91±69.324	0.695
Blood loss (ml)	15.06±37.556	27.93±115.012	0.390
Length of hospital stay (day)	6.18±1.946	6.60±2.814	0.281
Overall complication			0.916
No	57 (91.9%)	145 (92.4%)	
Yes	8 (8.1%)	12 (7.6%)	



Basic data

Variables	CT-Room	Hybri-OR	P Value
Cell type			0.169
adenocarcinoma	46(63.9%)	100 (45.2%)	
sqCC	0 (0%)	2 (0.9%)	
Others	1 (1.4%)	2 (0.9%)	
benign	19(26.4%)	71 (32.1%)	
metastatic	6 (8.3%)	46 (20.8%)	
	72 Nodules in 62 patients =1.16	221 Nodules in 157patients =1.41	



Operator and Assistants position



Single-incision 3D Thoracoscopic Surgery in Hybri-OR

台灣彰基 胸腔外科

Discussion

