An easy method to introduce a bronchial blocker To the intended bronchus in pediatric patients

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Background

It is rather technically difficult to introduce a bronchial blocker (BB) to the intended bronchus in pediatric patients, because the diameter of the trachea isn't enough wide to manipulate a fiber optic bronchoscopy (FOB) and a BB simultaneously. Here we introduced our easy method to achieve this. Our method is as follows. At first, we intubated a proper size of tracheal tube (1-a) and advanced it into the intended bronchus with the aid of FOB (1-b). Then we introduced an Arndt® bronchial blocker to the intended bronchus through the tracheal tube (1-c). After that we once extubated the tracheal tube remaining the bronchial blocker in the bronchus (1-d). Finally, we intubated another tracheal tube, and adjust the position of a BB after fixed the patients position (1-e). This report is a case series.

Figure 2

Case Report

We tried to apply our method to 9 pediatric cases (4 months to 3 years) as shown in Table 1. We adjust the position of a BB after fixed the patients position. (figure 2 - a to c) As shown in the Figure 2-d, isolated lung ventilation was successful (right side block). In all cases, intubation to intended bronchus was easy (within 20 seconds), and BB could be advanced into the bronchus. After patients were placed in the lateral decubitus position, the position of BB was adjusted under FOB.

Discussion

An Arndt® bronchial blocker has a guide loop that enabled us to introduce the BB to the intended bronchus by FOB. However, manipulation of both BB and FOB is quite difficult or impossible in infant or small children because the diameter of a tracheal tube is not enough wide. With our method, introducing a BB to the intended bronchus is quite easy, and BB can be placed outside a tracheal tube, which made easier to handle FOB.

Conclusion

Our method presented here was quite effective to place a BB into the intended bronchus.

Learning Points

We recommend that we once intubate a tracheal tube into the intended bronchus and introduce a BB, and extubate a tube then re-intubate another tracheal tube in pediatric cases.

Figure 1

#	Age (m)	Gender	Height (cm)	BW (Kg)	Disease	Operation	Tube (mm)
1	12	male	74	9.0	Lt bronchial atresia	Lobectomy	4.5
2	6	male	63.8	6.2	Rt mediastinal tumor	Resection	3.5
3	7	male	62	6.7	Rt lower lobe CCAM	Lobectomy	4
4	4	male	68	6.5	Rt lower lobe CCAM	Lobectomy	4
5	4	male	66.9	9.2	Lt lower lobe CCAM	Lobectomy	4
6	6	male	66.4	7.4	Lt lower lobe CCAM	Lobectomy	4
7	10	female	75	8.5	Rt middle lobe CCAM	Lobectomy	4
8	14	male	76.5	10.4	Lt bronchial atresia	Lobectomy	4
9	36	male	86.8	11.1	Lt lower sequestration	Lobectomy	4.5

Table 1