



Memorial Sloan Kettering
Cancer Center

Ultrasound Guided Fine Needle Aspiration of Thyroid: Inadequacy Rate with Rapid On Site Evaluation

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September 9, 2019
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Dr. Jean-Marc Cohen declares he has no conflict(s) of interest to disclose.

Meta analysis data in the literature has shown an average inadequacy rate for thyroid ultrasound guided fine needle aspiration (UFNA) of 13%



Table 1. Summary of the 8 articles used in the meta-analysis

First author	FNA cases	ND	Benign	AUS/FLUS	FN/SFN	SM	Malignant	Cases with follow-up	Benign histology	Malignant histology
Jo [17]	2,987	509 (17.0)	1,792 (60.0)	101 (3.4)	298 (10.0)	71 (2.4)	216 (7.2)	1,022 (34.2)	746 (73.0)	276 (27.0)
Renshaw [18]	7,086	1,671 (23.6)	3,829 (54.0)	548 (7.7)	606 (8.6)	131 (1.9)	301 (4.2)	1,331 (18.8)	906 (68.1)	425 (31.9)
Nayar [19]	5,194	274 (5.3)	3,337 (64.2)	924 (17.8)	307 (5.9)	97 (1.9)	255 (4.9)	1,413 (27.2)	1,079 (76.4)	334 (23.6)
Theoharis [20]	3,207	357 (11.1)	2,368 (73.8)	95 (3.0)	176 (5.5)	43 (1.4)	168 (5.2)	378 (11.8)	176 (46.6)	202 (53.4)
Kim [21]	865	16 (1.8)	504 (58.3)	141 (16.3)	10 (1.2)	54 (6.2)	140 (16.2)	204 (23.6)	22 (10.8)	182 (89.2)
Her-Juing Wu [22]	1,382	278 (20.1)	539 (39.0)	376 (27.2)	116 (8.4)	36 (2.6)	37 (2.7)	205 (14.8)	157 (76.6)	48 (23.4)
Bongiovanni [23]	3,474	70 (2.0)	1,898 (54.7)	220 (6.3)	880 (25.3)	219 (6.3)	187 (5.4)	1,305 (37.6)	763 (58.5)	542 (41.5)
	250 ²	40 (16.0)	166 (66.4)	28 (11.2)	6 (2.4)	5 (2.0)	5 (2.0)	53 (21.2)	42 (79.2)	11 (20.8)
Bohacek [24]	1,000	56 (5.6)	671 (67.1)	8 (0.8)	172 (17.2)	24 (2.4)	69 (6.9)	451 (45.1)	321 (71.2)	130 (28.8)
Total	25,445	3,271	15,104	2,441	2,571	680	1,378	6,362	4,212	2,150

Numbers in parentheses are percentages. ND = Nondiagnostic; SM = suspicious for malignancy.

¹ Cases provided by Z.W.B., University of Pennsylvania Medical Center, Philadelphia, Pa., USA. ² Cases provided by W.C.F., Massachusetts General Hospital, Boston, Mass., USA.



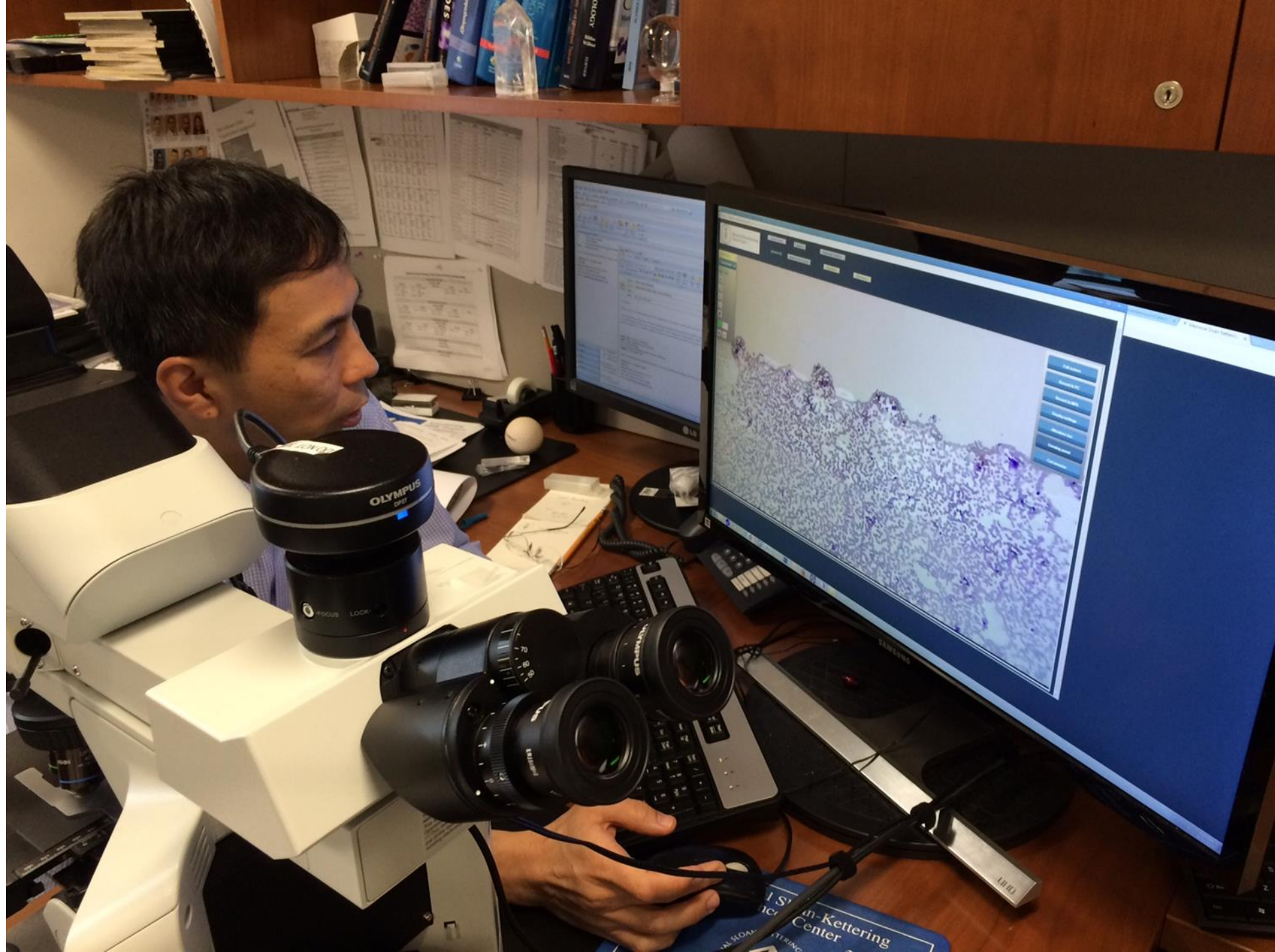
We investigated the inadequacy rate for UFNA recently performed at our institution with rapid on site evaluation (ROSE).

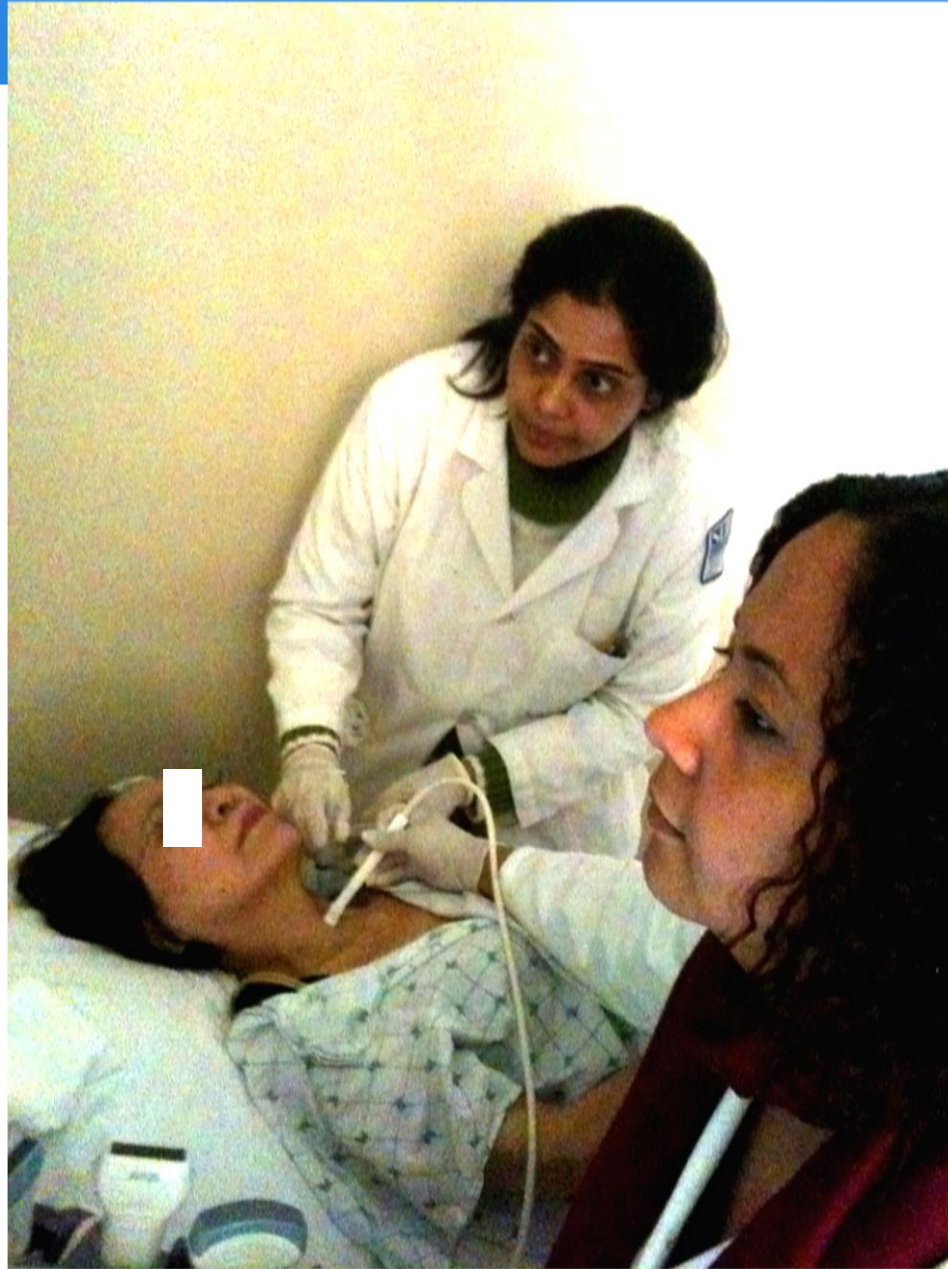


Materials and Methods

We searched the electronic medical record for cases of thyroid UFNA performed at our institution over one year. Procedures were performed by radiologists or interventional cytopathologists and all underwent ROSE by a cytotechnologist and cytopathologists using telecytology, or by the cytopathologist performing the procedure.







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Materials and Methods

In most cases a single pass was obtained. Specimens were considered adequate if at least 6 clusters of 10 follicular cells were present.



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Results

- 618 Cases identified
 - ❖ 461 Performed by radiologist
 - ❖ 157 Performed by interventional cytopathologist
- 607 Adequate both at ROSE and Sign out.
- 3 Inadequate at ROSE but adequate at sign out.
- 2 Adequate at ROSE but inadequate at sign out.
- 6 Inadequate a ROSE and sign out.



Results

- ❑ Overall inadequacy rate was 8/618 (1.29%)
- ❑ Inadequacy Rate for cases performed by radiologist: 6/461 (1.30%)
- ❑ Inadequacy Rate for cases performed by cytopathologists: 2/157 (1.27%)



Conclusion

Thyroid UFNA performed with ROSE substantially reduces the inadequacy rate at our institution as compared to the average reported in the literature.



Conclusion

Comparable inadequacy rates are found in procedures performed by radiologists and cytopathologists



Conclusion

By lowering the inadequacy rate ROSE reduces the need for re-biopsy, cutting costs and avoiding additional patient discomfort and anxiety.

