



## Ayurvedic Management of Nontoxic Nodular Goitre with Haemorrhagic Nodules, Calcification and Atypia – A Case Report

**Mahesh Sabade**<sup>1</sup> 

1.Honorary Consultant at Students' Health Centre, SP Pune University, Pune, India Consultant TanMan Ayurveda Research Centre, Pune

### Article Info

#### Article history:

Received on: 24-06-2022

Accepted on: 21-08-2022

Available online: 31-08-2022

#### Corresponding author-

Mahesh Sabade, Honorary Consultant, Health Centre, SP Pune University, Pune, India Consultant TanMan Ayurveda Research Centre, Pune.

[Email: maresh.sabade@gmail.com](mailto:maresh.sabade@gmail.com)

### ABSTRACT:

Ayurvedic treatment has been beneficial in treating disorders related to metabolism. In this case report, a condition involving thyroid gland, manifesting haemorrhagic nodules with the presence of atypical cells was treated with Ayurveda. It showed encouraging results in this case study. Ayurvedic herbo-mineral preparations used here proved effective in correcting the morphology of the thyroid cells from atypical nature to normal and also healing the haemorrhagic status of the nodules. The probable hazards of the condition and related management including removal of thyroid gland were prevented. A long term ayurvedic management was planned for better results. This is an observation based case report and has limitations in comparison to a clinical trial. Ayurvedic management can be effective in conditions that can be considered as new-age diseases when appropriate thought process is applied. Thyroid disorders are few of these conditions. Similar plan can be thought of in various such unmentioned disorders in ayurveda. This may be a guiding case report.

**Key-words:** Ayurveda, Thyroid disorders, atypical cells, haemorrhagic nodules,

### INTRODUCTION

Presently, thyroid disorders are more prevalent in comparison to the previous decades. The present case was presented with non-toxic goitre having haemorrhagic nodules. There was also the presence of calcification and changed morphology showing atypia in thyroid cells. The patient was suggested thyroidectomy by the western medicine practitioner. That would have involved the medication of synthetic thyroid hormones for lifetime and also the possibility of hormonal imbalance. The number of thyroidectomy surgeries is more than 150,000 cases every year in the USA.<sup>1</sup>

Ayurveda has been effective in conditions that are not mentioned in ancient ayurvedic texts. With a proper understanding of the *Agni*, and imbalance of *Doshas*,

*Dhatus* and *Malas*, such conditions can be well-treated. In this case study, a patient opted for Ayurvedic treatment in an effort to avoid thyroidectomy. Nevertheless, the treatment was aimed at healing the haemorrhagic nodules and the atypia especially thus preventing the chances of malignancy.

In this case study, ayurvedic principles were used for understanding the condition on the basis of *Dosha*, *Dhatu* and *Mala*. This case has also shown encouraging results where, not only the symptoms disappeared but morphology of the cells was also improved which otherwise could have manifested into serious complications with a possibility of thyroidectomy.



## METHODS

### Case history

Forty six year old non-smoker, non-alcoholic Indian female patient presented to my clinic at Pune for growth in her neck region suspecting thyroid swelling, which has been present for three to four weeks. Along with this, the patient also experienced generalized weakness.

### Past History:

As part of medical history, patient did not have any thyroid related condition. However, patient suffered from chronic sinusitis and occasional pain in lumbar area. The patient has been overweight with an average BMI of 28 for approximately six years. There were no other conditions or significant family history. Menstrual history did not present any unusual pattern.

The previous investigations demonstrated following findings –

Ultrasound sonography of abdomen and pelvis done in February 2013 showed –

- mild fatty liver
- left ovarian corpus luteal cyst
- retroverted uterus with possibility of Nabothian cyst
- a renal cortical cyst in left kidney

MRI revealed, there is Mucosal thickening at maxillary and ethmoidal sinuses; a cyst in nasopharynx with few non-specific lymph nodes at both parotid regions.

There was moderate lumbar spondylosis L<sub>3-4</sub>, L<sub>4-5</sub>, L<sub>5</sub>S<sub>1</sub> with a mild subcutaneous soft tissue oedema at posterior aspect of L<sub>2</sub> to sacral region.

On colonoscopy, rectal polyps were found and the HP examination of the polyps revealed that these were hyperplastic polyps without any evidence of malignancy.

### Diagnosis and assessment

In the course of the investigation, an ultrasound of the thyroid gland done in February 2013, showed that enlarged thyroid gland with multiple hypoechoic lesions that were solid in nature. The thyroid also divulged multiple calcifications in the middle pole. Overall, the picture was suggestive of nontoxic nodular goitre. Moreover, bilateral small sized, upper internal jugular lymph nodes were also noted on ultrasound. On FNAC it was observed that the patient had haemorrhagic cystic lesion with scanty atypical cells.

On blood work, leucocytosis and thrombocytosis with low haemoglobin were observed. Thyroid profile including T<sub>3</sub>,

T<sub>4</sub> and TSH were found to be within normal limits.

### Examination

Ayurvedic clinical methods such as Pulse and abdominal examinations were done as a part of physical examination. With these examinations, the status of *Doshas* was estimated. Apart from generalized weakness and loss of appetite, patient did not present any specific symptoms. She had well maintained blood pressure 124/78 mm of Hg. (Table 1)

### Ayurvedic Diagnosis

The closest disease/condition to thyroid disorder/goitre mentioned in Ayurveda can be *Galaganda*.<sup>2</sup> As per *Ayurveda (Madhav Nidan)*, it is an immovable swelling in the neck area which is solid and protruding. It is also seen as *Ekanag Shotha*. As far as ayurvedic diagnosis is concerned it was diagnosed as *Kaphaj Galaganda*. Overall, prognosis of the condition was bad and the condition was difficult to cure. It was also observed that a chronic status of *Agnimandya* and *DhatvAgnimandya* has led to unhealthy replenishment of *Dhatu*s making them vulnerable for various other conditions. This was observed through the symptoms such as generalized weakness, *Katishula*, and *Jeerna Pratishyay* as symptoms. Moreover, through MRI, it was also revealed and confirmed that there has been weakness in *Mansa* and *Asthi Dhatu* primarily manifesting the lumbar spondylitis.

### Therapeutic focus and assessment

Reinstating the status of metabolism (*Agni*) and health of *Dhatu* were the goals of the ayurvedic treatment and it was expected that achieving these goals would help the thyroid tissue rectify its pathology in the most natural way. Ayurvedic Treatment was started with following herbs' combinations –

*Phalatrikadi Guggul*<sup>3</sup>

*Shwadanshradi Guggul*<sup>4</sup>

*Laghu malini Vasanti*<sup>5</sup>

*Heerak Bhasma*<sup>6,7,8,9</sup>

*Phalatrikadi Kwath*<sup>10</sup> is a formulation from *Charak Samhita* – in *Prameha* (diabetes) chapter. This formulation is effective in liver disorders and diabetes. In the lineage of *Panchabhautik chikitsa*, this is modified in a guggul formulation with a slight change in the herbs. In the present case, this formulation was mainly used for improvement in *Agni* and *DhatvAgni* with a cleansing action over kapha and *Kleda*. Similarly, *Shwadanshradi Guggul* is a variation of *Gokshuradi Guggul* by adding *Pashanbhed* and *Dhamasa* to it. It was used specifically for *Shotha* and *Vatanuloman*.

*Laghmalini Vasant* was planned for improving *Agni* and reducing the excess *Kapha* and *Kleda*, *Dhatu Shaithilya* and subsequent *Shotha*. (Table 2)

A diet plan aimed at pacification of *Kapha* and improvement in the metabolism was advised. Heavier food items, yogurt<sup>11</sup>, black gram<sup>12</sup> were mainly refrained from the patient’s diet.

## RESULTS

Ayurvedic Treatment was continued for one year with Skype/phone and in-person follow ups. There has been a noticeable improvement in her general condition. Appetite was improved with a transformation in overall feeling of wellbeing. In addition to this, there was a weight loss of five kilos over a period of one year. The investigations **Table: 3** were done again after 12 months. It showed certain specific changes in the thyroid gland. On investigations, the thyroid gland showed complete absence of atypical cells and there were no signs of haemorrhagic nodules; though several typical benign nodules were present.

## DISCUSSION

Thyroid disorders are the diseases related to the metabolism.<sup>13</sup> From Ayurveda’s perspective, it is evident that impaired metabolism turns out to be the precursor for these disorders.

Ayurveda considers five main components of a disease and they are –

- Causative factors,
- Prodromal symptoms
- Main symptoms
- Pathogenesis &
- Factors affecting the prognosis.<sup>14,15</sup>

A thorough information about these factors guide better in the management of any disease.

In any disease process, the primary focus is on the derangement of *Dosha*, *Dhatu* and *Mala*. The disease process gets triggered when the *Agni* (the digestive capacity) starts malfunctioning and shows some deficit in its physiological activities.<sup>16</sup> Re-establishing, the equilibrium of bodily tissues and normalizing the *Agni* are considered to be the main aspects in the treatment of any disease. The Ayurvedic management for any disease is to recreate the equilibrium of *Doshas* and *Dhatu*.<sup>17</sup> The treatment focuses on increasing the weakened *Agni* (*Jatharagni*, *Bhutagni* and *Dhatvagni*) and that helps to

keep a check over *Doshas*. There is no specific information about ‘thyroid gland’ in *Ayurveda*, except the condition *Galaganda* which is a swelling in the neck area. This resembles exactly with the goitre. Here it is hypothesized that, by improving the status of *Agni* and pacifying *Doshas*, the thyroid gland will re-establish its healthy status by improving the functioning.

Keeping these threads in mind, Ayurvedic Treatment was planned. In the present case, due to weakened *Agni* (*Agnimandya* and *Dhatvagnimandya*) and the impairment of metabolism, there is accumulation of *kapha* in form of *Shotha* at the site of neck manifested as *Galaganda*. The focus was mainly on ayurvedic diagnosis and the investigations were used as the tools for assessment of efficacy of the treatment. That is the reason, why other investigations were not suggested. *Phalatrikadi Guggul* is a potent formulation that helps to boost the *Agni* by reducing excess of earth and water elements from the body. The actions of *Phalatrikadi Guggul* are well-known in the areas of liver where it helps to channelize *Pitta* from the *Rakta Dhatu* and liver. This leads to a cleansing action over *Pitta Dosha* and *Rasa Dhatu* specifically. Thus, enhancing the functions of *Rasagni* in a better way. The same cleansing action is desired in this case and will be helpful in the management of *Shotha*<sup>18</sup> (oedema). *Laghmalini Vasant* is a combination that works in two specific ways in this case – improvement in *Agni* and the cleansing of *Srotas*. This helps in reducing *Shotha* (oedema) and strengthening the *Dhatu*s. It has a drying effect which is helpful in reducing excessive accumulation of the fluid.<sup>19</sup> *Shwadanshtradi guggul* works on regulation of *Aap Mahabhut* by supporting the urine formation. It also has an action to channelize *vata* by regulating *Apan Vata*.<sup>20</sup> *Heerak Bhasma* is the medicated calx (*Bhasma*) preparation of diamond. It is understood to be beneficial in boosting the quality of *Dhatu*s and especially *Sarvadehik Shukra Dhatu*. This specific action enhances the strength of *Dhatu*s mainly and thus reducing the vulnerability in them. This acts as a crucial action in the pathogenesis of such deep-rooted diseases. It’s been showing encouraging results in various cancer conditions.<sup>21,22,23</sup> Taking the known actions into consideration, it can be stated that these preparations may have helped to improve the status of *Agni* at the level of *Jatharagni* as well as *Dhatvagni*, leading to an overall positive effect over the metabolism. This stimulus to the metabolism has effectively shown improvement in the status of every *Dhatu* and *Dosha*. As per ayurvedic thought process, no disease can escape *Dosha*, *Dhatu* and *Mala*. With this plan of management, a

remarkable improvement in the disease state was observed.

## CONCLUSION

From the efficacy observed in this case, it suggests that the ayurvedic treatment planned as per the *Dosha* and *Dhatu* can help in conditions such as thyroid gland imbalances. It can be hypothesized that ayurvedic treatment can be planned for the management of thyroid disorders where the histopathological appearances are exhibiting abnormality. This case study exhibiting encouraging results may be a guiding study for the researchers working in this area even though there could have been a scope for a few more investigations.

**Acknowledgement:** Nil

**Financial support:** Nil

**Conflict of Interest:** Nil

## ORCID

Mahesh Sabade , <https://orcid.org/0000-0003-3577-6354>

## REFERENCES

1. Sun GH, DeMonner S, Davis MM. Epidemiological and economic trends in inpatient and outpatient thyroidectomy in the United States, 1996–2006. *Thyroid*. 2013 Jun 1;23(6):727-33.
2. Tripathi B. *Charak Samhita Chikitsasthan Ch 12*, Varanasi: Chaukhamba Surbharati Prakashan. 2009: 458.
3. Datar AV. *Panchabhautik Chikitsa*, Sangli: VP Datar Publishers. 1990: 202.
4. Datar AV. *Panchabhautik Chikitsa*, Sangli: VP Datar Publishers. 1990: 201-203.
5. Gune GV. *Ayurvediya Aushsadhigunadharma Shastra*, Pune: Vaidyaka Granth Bhandara. 1992:25.
6. Satpute AD. *Rasaratna Samuchay*, Varanasi: Chaukhamba Sanskrit Pratishtan. 2017: 91.
7. Pathak R, Joshi R, Sharma R. *Ayurved Sar Sangrah*, Allahabad: Baidyanath Publication. 1999:133.
8. Kaur R. Role of Rasaushadhies in Balancing Doshas wsr to Muscular Disorders.
9. Pal D, Gurjar VK. Nanometals in Bhasma: ayurvedic medicine. In *Metal Nanoparticles in Pharma 2017* (pp. 389-415). Springer, Cham.
10. Kumar N, Singh AK, Ghildiyal S. Potent hepatoprotective Phaltrikadi Kwath: A clinical study. *SM J Pharmac Ther*. 2015;1(1):1005.
11. BV P, JAYAVARMA MK. A critical understanding of nutraceutical aspects of curd in Ayurveda. *RESEARCH AND EDUCATION IN INDIAN MEDICINE*. 2014 Jan;20(1):51-7.
12. Dua P, Dua P. DIETETICS IN AYURVEDA-THE FORGOTTEN SCIENCE. *International Journal of Research in Ayurveda & Pharmacy*. 2011 Jul 1;2(4).
13. Mullur R, Liu YY, Brent GA. Thyroid hormone regulation of metabolism. *Physiological reviews*. 2014 Apr 1.
14. Yogita C. DIAGNOSTIC METHODS PRESCRIBED IN AYURVEDA: A REVIEW.
15. Shriyadunmopadhyaya. *Madhav Nidana, Madhukosha Commentary*. Reprint ed. Purvardha, Chapter 1. Varanasi. Chaukhamba prakashan. 2012. p. 49.
16. Kunte AM, Navre KR. *Ashtangahrdaya (A Compendium of the Ayurvedic System) of Vagbhata, ‘Sarvangasundra’ of Arunadatta and ‘Ayurvedarasayana’ of Hemadri*. Sutra Sthan 13/27. Varanasi: Chaukhamba Surbharti Prakashan; 2002.
17. Goyal M, Sasmal D, Nagori BP. Ayurveda the ancient science of healing: an insight. In *Drug discovery research in pharmacognosy* 2012 Mar 16. IntechOpen.
18. Gupt AK. *Charak Samhita Chikitsasthan*. Banaras. 2<sup>nd</sup> Edition. Bhargav Pustakalay. 12/15-17: 473.
19. Gune GV. *Ayurvediya Aushsadhigunadharma Shastra*, Pune. Vaidyaka Granth Bhandara, 2001
20. Datar AV. *Brihatrayiratna. Panchabhautik Chikitsa*. Sangli, VP Datar Publishers. 1990: 201-203.
21. Bendale Y, Bendale V, Birari-Gawande P, Kadam A, Gund P. Tumor regression with ayurvedic rasayana therapy in squamous cell carcinoma of lungs. *Rasamruta*. 2015;7:1-5.
22. Bakrania AK, Nakka S, Variya BC, Shah PV, Patel SS. Antitumor potential of herbomineral formulation against breast cancer: Involvement of inflammation and oxidative stress.
23. Vaidya A, Vaidya R, Vaidya V, Joshi B, Mody J, Joshi J, Amonkar A, Sirsat S. Spontaneous or induced regression of cancer a novel research strategy for ayurvediya. *Ancient science of life*. 2003 Jan;22(3):75.

**How to cite this article:** Sabade M “Ayurvedic Management Of Nontoxic Nodular Goitre With Haemorrhagic Nodules, Calcification And Atypia – A Case Report” *IRJAY*. [online] 2022;5(8); 121-127.  
Available from: <https://irjay.com>  
DOI link- <https://doi.org/10.47223/IRJAY.2022.5815>

**Table 1**

<i>Dashavidha Pariksha</i>	<b>Patient</b>
<i>Prakriti</i>	<i>Pitta-Kapha</i>
<i>Vikriti</i>	<i>Kapha, Pitta</i>
<i>Saar</i>	<i>Madhyam</i>
<i>Samhanana</i>	<i>Avara</i>
<i>Praman</i>	<i>Vishama Sharira (Sthool)</i>
<i>Satmya</i>	<i>Avara</i>
<i>Satva</i>	<i>Madhyam</i>
<i>Ahar shakti</i>	<i>Uttam</i>
<i>Vyayam Shakti</i>	<i>Avara</i>
<i>Vaya</i>	46 years

**Table 2**

<b>Ayurvedic Preparation</b>	<b>Dosage</b>	<b>Timing</b>	<b>Duration</b>
<i>Phalatrikadi Guggul</i>	1gm per day	3 times a day in divided doses	1 year
<i>Shwadanshtradi Guggul</i>	1gm per day	3 times a day in divided doses	1 year
<i>Laghmalini Vasant</i>	250 mg per day	Twice a day	1 year
<i>Heerak Bhasma</i>	10mg per day	Once a day	First 3 months

**Table: 3 Investigations**

<b>Date</b>	<b>Test</b>	<b>Findings</b>
7 <sup>th</sup> Feb 2013	Complete blood count	WBC – 12.7 * 10 <sup>9</sup> /L <b>H</b> Haemoglobin – 11.6 gm/dl <b>L</b> Platelets – 477 x10 <sup>9</sup> /L <b>H</b>
	TSH	1.34 uIU/mL <b>WNL</b>
08/02/13	Ultrasound – upper abdomen	Mild fatty liver
	Ultrasound – pelvis	3.55x3.28x3.08 cm left ovarian haemorrhagic corpus luteal cyst
	Ultrasound thyroid	Enlarged thyroid gland; Nontoxic nodular goitre Left middle pole has multiple small calcifications Multiple hypoechoic lesions are solid in nature Left middle pole 1.13cm is suspicious Bilateral small upper internal jugular lymph nodes are present Adv FNAC
	HP report (Sample of 08/02/13) Specimen – rectal polyps from colonoscopy	Hyperplastic polyp – no hyperplasia or malignancy
26/03/13	Left thyroid FNAC	Haemorrhagic cystic lesion with scanty atypical cells seen. Possibility of papillary thyroid carcinoma cannot be excluded in view of the finding of atypical cells.
	MRI brain	Mucosal thickening at maxillary and ethmoidal sinuses. Cyst in nasopharynx Few non-specific lymph nodes at both parotid regions
	MRI lumbar spine	Moderate lumbar spondylosis L <sub>3-4</sub> , L <sub>4-5</sub> , L <sub>5</sub> S <sub>1</sub> Mild subcutaneous soft tissue oedema at posterior aspect of L <sub>2</sub> to sacral region. Retroverted uterus with possibility of Nabothian cyst Left renal cortical cyst
	MRI lower abdomen	Bulky & retroverted uterus with uterine fibroids and Nabothian cyst
11/03/14	Ultrasound thyroid	Several typical benign nodules in the thyroid gland Typical of benign adenomatous nodules

Mahesh "Ayurvedic Management of Nontoxic Nodular Goitre with Haemorrhagic Nodules, Calcification and Atypia – A Case Report.": 2022; 5 (8):121-127

香港浸信會醫院  
Hong Kong Baptist Hospital

九龍窩打老道222號  
222 Waterloo Road, Kowloon  
Tel: 2339 8980/8993 Fax: 2339 8990

**ULTRASOUND**

Name : [REDACTED] Referral Doctor : 1872 DR. POON EDWIN  
Sex/Age : F / 43Y DOB: 19.02.1969 Ordering Doctor : 1872 DR. POON EDWIN  
HS No. : 0805590 Exam Date : 08.02.2013  
HKID : P4955165 Clinic/Ward Bed : D6 D666-2

Exam: US THYROID

**REPORT:**

Thyroid gland is slightly enlarged.  
The contour is smooth.  
Parenchymal echogenicity and vascularity are normal.  
0.84cm maximal diameter hypoechoic lesion and 0.71cm maximal diameter similar lesion are seen in the right upper and lower poles respectively.  
1.13cm maximal diameter and 1.01cm maximal diameter hypoechoic lesions are present in the left middle and lower poles respectively.  
All are ovoid circumscribed without suspicious vascularity.  
Only the left middle pole has multiple small calcifications.  
Trachea is central in position.  
Bilateral small upper internal jugular lymph nodes are noted.

**IMPRESSION:**

Non-toxic nodular goitre. Multiple hypoechoic lesions are solid in nature. Only the left middle pole 1.13cm one is suspicious. Suggest ultrasound guided FNAC for further assessment.

Thank you for your kind referral.

DR. YAU CHI KWONG FRANCIS  
CONSULTANT RADIOLOGIST  
MBSHQJLFRGKJLFFHKCR  
DNED(London, FRCR, MRCP, FRCR) Page 1 of 1  
Printed Date: 08.02.2013 10:33  
Typed By: 90216  
ULTRASOUND  
HKHXNR1300176288T

USG Thyroid Before treatment

香港浸信會醫院  
HONG KONG BAPTIST HOSPITAL  
Cytology

九龍窩打老道222號  
222 Waterloo Road, Kowloon  
Tel: 2339 8988 Lab: 2339 8921

Name : [REDACTED] Ward/Bed : NSD6 D612-1  
Sex/Age : F/44 Y Doctor : POON EDWIN 1872  
Patients No : 0805590 Specimen Received: 26/03/2013  
Episode No. : 11277716 Lab No: C13001171

**FINE NEEDLE ASPIRATION CYTOLOGY**

Accession No: C13001171  
Specimen : Left thyroid FNAC

**Clinical Summary**  
? Haemorrhagic nodule  
Hypoechoic nodule

**Specimen Preparation Details**  
Approx. 20ml, pinkish slightly turbid fluid  
ThinPrep 1  
Cytospin 2

**Microscopic Description**  
The ThinPrep smear and cytospin preparations yield mainly content of a haemorrhagic cystic lesion which comprises abundant haemosiderin-laden macrophages admixed with some inflammatory cells and red blood cells. Only a few small clusters of thyroid follicular cells are included. They show mild nuclear atypia with slightly irregular nuclear membrane and occasional nuclear grooves. One intranuclear pseudoinclusion is identified. Scanty calcified material is noted in the background.

**Comment:** The possibility of papillary thyroid carcinoma cannot be excluded in view of the finding of atypical cells. However, further cytological assessment is limited by the scantiness of these cells. Please correlate with clinical and radiological findings.

**Diagnosis**  
Left thyroid nodule, ultrasound-guided FNAC  
Haemorrhagic cystic lesion with scanty atypical cells seen.  
(Please see comment.)

(\*)  
Copy to Dr. Cheung Yu Keung (2011)

Date: 26/03/2013 16:04  
Page 1 of 1  
Dr. LEE Chun Kit, Wilson  
MBBS(HK), FRCR, FRCR(Pub), FRCR(M), FRCR(AM) (Pathology), F Dip EID (CUBK),  
F Dip Systemic & Immunology (CUBK)

**CYTOLOGY**  
Lab Episode No. C00002888

FNAC Before treatment

iRad 卓亞醫學掃描診斷中心  
MEDICAL DIAGNOSTIC CENTRE

TO : Dr. Chan P. S. Derek (陳澤深 外科醫生) REPORT DATE : 12 MAR 2014  
EXAM DATE : 11 MAR 2014  
NAME : [REDACTED] OUR REF NO : MK140300451  
SEX/AGE : F/43 DOB : 19 FEB 1969 YOUR REF NO :  
ACCESSION NO : 002MK14000032227

**ULTRASOUND OF THYROID**

Thyroid gland shows the following nodules.  
The right lobe shows two nodules with the largest one measuring up to 0.8 cm. The left lobe shows three nodules with the largest one measuring up to 1.2 cm. The nodules are typical of benign adenomatous nodules.  
The background thyroid echotexture is homogeneous and normal.

**COMMENT:**

Several typical benign nodules in the thyroid gland typical of benign adenomatous nodules.

Dr. Simon Tang  
MBBS(HK), FRCR, FRACR  
FRCR(Pub), FRCR(M) Radiologist

Dr. Chan P. S. Derek (陳澤深 外科醫生)  
MBBS(HK), FRCR, FRACR  
FRCR(Pub), FRCR(M) Radiologist