

References

- 1.P.F. Sharp, HG Gemmel and FW Smith, Practical Nuclear Medicine, Oril , Springer–Verlag London Limited 2005 , Third Edition
- 2.Donald R. Bernier, Paul E. Christian, James K. Langa, Nuclear Medicine Technology and Techniques, Mosby, 4th edition.
- 3.David E., P.A. Vice, F.Clark, The Investigation of Thyroid Disease, The Radiochemical Center Amersham England, P22
4. Alnagar B., 1996. Iodine Supplementation in a Goitre Endemic Area with Special Reference to Pregnancy and Neonatal Period, Uppsala University
5. Hetzel, B.S. 1983. Iodine Deficiency Disorders (IDD) and their eradication. *Lancet* ii:1126-1129
6. WHO, UNICEF, and ICCIDD. 2001. Assessment of the Iodine Deficiency Disorders and monitoring their elimination. Geneva: WHO publ. WHO/NHD/01.1. 1-107 pp.
7. Koutras, D.A., Matovinovic, J., and Vought, R. 1980. The ecology of iodine. In Endemic goiter and endemic cretinism. J.B. Stanbury, and B.S. Hetzel, editors. New York: JohnWiley publ. 185-195.
8. WHO, UNICEF, and ICCIDD. 1994. Indicators for assessing Iodine Deficiency Disorders and their control through salt iodization. Geneva: WHO publ. WHO/NUT/94.6. 1-55 pp.
9. Stanbury, J.B., and Hetzel, B.S. 1980. Endemic goiter and cretinism : iodine nutrition in health and disease. New York: J. Wiley publ. 1-606 pp.
10. Boyages, S.C. 1993. Iodine Deficiency Disorders. *J Clin Endocrinol Metab* 77:587-591.
11. Hollowell, J.G., and Hannon, W.H. 1997. Teratogen update : Iodine deficiency, a community teratogen. *Teratology* 55:389-405.
- 12 .Kambal Ali 1986, Endemic Goitre in Darfur Province, M.Sc. Thesis, Faculty of Medicine, University of Khartoum
13. Delange, F. 1992. Rôle de l'iode dans la nutrition infantile. Les troubles dûs à la déficience iodée et leur prévention. *Doc. Scient. Guigoz* 133:1-14.
- 14.Meagan Brennan,Thyroid lumps and bumps, Reprinted from Australian Family Physician Vol. 36, No. 7, July 2007
15. A. Thallage & T. Al-Zahrani: Anesthetic Management of Huge Goiter with Retrosternal Extension. *The Internet Journal of Anesthesiology*. 2005 Volume 10 Number 1
- 16.Bruneton JN, Balu-Maestro C, Marcy PY, et al: Very high frequency (13 MHz) ultrasonographic examination of the normal neck: detection of normal lymph nodes and thyroid nodules. *J Ultrasound Med* 1994; 13:87
- 17.Marqusee E, Benson CB, Frates MC, et al: Usefulness of ultrasonography in the management of nodular thyroid disease. *Ann Intern Med* 2000; 133:696-700
- 18Tan GH, Gharib H: Thyroid incidentalomas: management approaches to nonpalpable nodules discovered incidentally on thyroid imaging. *Ann Intern Med* 1997; 126:226-231
19. Thyroid Ultrasound and Ultrasound-Guided FNA Second Edition

21. Tangpricha V, Chen BJ, Swan NC, et al: Twenty-one-gauge needles provide more cellular samples than twenty-five-gauge needles in fine-needle aspiration biopsy of the thyroid but may not provide increased diagnostic accuracy. *Thyroid* 2001; 11:973-976
22. Amrikachi M, Ramzy I, Rubinfeld S, et al: Accuracy of fine-needle aspiration of thyroid. *Arch Pathol Lab Med* 2001; 125:484-488
23. Gharib H: Changing concepts in the diagnosis and management of thyroid nodules. *Endocrinol Metab Clin North Am* 1997; 26:777-800
24. Gasbarri A, Martegani MP, Del Prete F, et al: Galectin-3 and CD44v6 isoforms in the preoperative evaluation of thyroid nodules. *J Clin Oncol* 1999; 17:3494-3502
25. Christensen L, Blichert-Toft M, Brandt M, et al: Thyroperoxidase (TPO) immunostaining of the solitary cold thyroid nodule. *Clin Endocrinol (Oxf)* 2000; 53:161-169
26. Wells SA Jr, Chi DD, Toshima K, et al: Predictive DNA testing and prophylactic thyroidectomy in patients at risk for multiple endocrine neoplasia type 2A. *Ann Surg* 1994; 220:237-250
27. Fine-Needle Aspiration Biopsy of the Thyroid Gland Hossein Gharib, M.D., FACP, MACE Reviewed and modified 23 May 2005
28. Shirato H, Shimizu S, Kunieda T, et al. Physical aspects of a linear accelerator synchronized with realtime tumor tracking system, *Int J Radiat Oncol Biol Phys* 2000 48, 1187-1195 .
29. [Ranade AV](#), [Rai R](#), [Pai MM](#), [Nayak SR](#), [Prakash](#), [Krisnamurthy A](#), [Narayana S](#). anatomical variations of the thyroid gland: possible surgical implications. [Singapore Med J](#). 2008 Oct;49(10):831-4
30. Burman KD, Adler RA, Wartofsky L. Hemiagenesis of the thyroid gland. *Am J Med* 1975; 58:143–146.
31. Monfared A, Saenz Y, Terris DJ. Endoscopic resection of the submandibular gland in a porcine model. *Laryngoscope* 2002; 112:1089–1093.
32. Moreau S, Gouillet de Rugy M, Babin E, et al. The recurrent laryngeal nerve: related vascular anatomy. *Laryngoscope* 1998; 108: 1351–1353.
33. Abboud B, Aouad R. Non-recurrent inferior laryngeal nerve in thyroid surgery: report of three cases and review of the literature. *J Laryngol Otol* 2004; 118:139–142.
34. Miller FR, Netterville JL. Surgical management of thyroid and parathyroid disorders. *Med Clin N Amer* 1999; 83:247–259.
35. Naghavi SE, Jalali MM. Papillary carcinoma of thyroglossal duct cyst. *Med Sci Monit* 2003; 9:CS67–CS70.
36. Tang ZH, Li WY. Diagnosis of ectopic thyroid in the tongue root by ^{99m}TcO₄(-) and ¹³¹I radionuclide thyroid imaging: report of one case. *Di Yi Jun Yi Da Xue Xue Bao* 2003; 23:1041–1042.
37. Thomas G, Hollat R, Daniels JS, et al. Ectopic lingual thyroid: a case report. *Int J Oral Maxillofac Surg* 2003; 32:219–221.
38. Boer A, Polus K. Lingual thyroid: a rare disease resembling base of tongue neoplasm. *Magy Onkol* 2002; 46:347–349.

- 39 . Chiu TT, Su CY,Hwang CF, et al. Massive bleeding from an ectopic lingual thyroid follicular adenoma during pregnancy. *Am J Otolaryngol* 2002; 23:185–188.
- 40 . Jimenez Oliver V, Ruiz Rico R, Davila Morillo A, et al. Intra-laryngeal ectopic thyroid tissue. Report of one case and review of the literature. *Acta Otorhinolaryngol Esp* 2002; 53:54–59.
- 41 . Byrd MC, Thompson LD,Wieneke JA. Intratracheal ectopic thyroid tissue: a case report and literature review. *Ear Nose Throat J* 2003 82:514–518.
- 42 . Ulug T, Ulubil SA, Alagol F. Dual ectopic thyroid: report of a case. *J Laryngol Otol* 2003; 117:574–576.
- 43 . Hollander EJ, Visser MJ, van Baalen JM. Accessory thyroid gland at carotid bifurcation presenting as a carotid body tumor: case report and review of the literature. *J Vasc Surg* 2004; 39:260–262.
- 44 . Larysz B, Jedrzychowska-Baraniak J, Nikodemaska I, et al. Ectopic thyroid tissue in the heart—a case report. *Kardiol Pol* 2003; 59:149–151.
- 45 . Chosia M, Waligorski S, Listewnik MH, Wiechowski S. Ectopic thyroid tissue as a tumour of the heart—case report and review of the literature. *Pol J Pathol* 2002; 53:173–175.
- 46 . Williams RJ, Lindop G, Butler J. Ectopic thyroid tissue on the ascending aorta: an operative finding. *Ann Thorac Surg* 2002; 73:1642–1647.
18. Ihtiyar E, Isiksoy S, Algin C, et al. Ectopic thyroid in the gallbladder: report of a case. *Surg Today* 2003; 33:777–780.
- 47 . Ghanem N, Bley T, Althoefer C, et al. Ectopic thyroid gland in the porta hepatis and lingua. *Thyroid* 2003; 13:503–507.
- 48 . Gungor B, Kebat T, Ozaslan C, et al. Intra-abdominal ectopic thyroid presenting with hyperthyroidism: report of a case. *Surg Today* 2002; 32:148–150.
- 49 . Ribeiro-Silva A, Bezerra AM, Serafini LN. Malignant Struma Ovarii: an autopsy report of a clinically unsuspected tumor. *Gynecol Oncol* 2002; 87:213–215.
- 50 . Jovanovic L, Delahunt B, McIver B, et al. Thyroid gland clonality revisited: the embryonal patch size of the normal human thyroid gland is very large, suggesting X-chromosome inactivation; tumor clonality studies of thyroid tumors have to be interpreted with caution. *J Clin Endocrinol Metab* 2003; 88:3284–3291.
- 51 . Stanbury JB, Ermans AE, Bourdoux P, et al. Iodine-induced hyperthyroidism: occurrence and epidemiology. *Thyroid* 1998; 8:83–100.
- 52 . Ermans AM, Camus M. Modifications of thyroid function induced by chronic administration of iodide in the presence of “autonomous” thyroid tissue. *Acta Endocrinol (Copenh)* 1972; 70:463–475.
- 53 . Wolff J, Chaikoff I. Plasma inorganic iodide as a homeostatic regulator of thyroid function. *J Biol Chem* 1948; 147:555.
54. Evered, D., *Diseases of the Thyroid Gland, Clinics in Endocrin. Metab.*, 3,3,425-449
55. Emanuel Rubin, *Essential Pathology*, Lippincott Williams and Wilkins, 3ed Edition, P 600-611
- 56.<http://www.eyeinstitut.net/subfiles/comocprb/graves.htm> (Accessed Jan. 2008)

57. Dumont, J.E., Ermans, A.M., and Bastenie, P.A. 1963. Thyroidal function in a goiter endemic. IV. Hypothyroidism and endemic cretinism. *J. Clin. Endocrinol. Metab.* 23 :325-335.
58. Delange, F., Ermans, A.M., Vis, H.L., and Stanbury, J.B. 1972. Endemic cretinism in Idjwi Island (Kivu Lake, Republic of the Congo). *J. Clin. Endocrinol. Metab.* 34:1059-1066.
- 59 . WHO, UNICEF, and ICCIDD. 2001. Assessment of the Iodine Deficiency Disorders and monitoring their elimination. Geneva: WHO publ. WHO/NHD/01.1. 1-107 pp.
60. Hetzel, B.S., and Pandav, C.S. 1996. S.O.S. for a billion. The conquest of Iodine Deficiency Disorders. 2nd Ed. Dehli: Oxford University Press publ. 1-466 pp.
61. Delange, F. 2000. Iodine deficiency. In *The thyroid. A fundamental and clinical text.* L.E. Braverman, and R.D. Utiger, editors. Philadelphia: Lippincott publ. 295-316
- 62 . Gaitan, E. 1980. Goitrogens in the etiology of endemic goiter. In *Endemic goiter and endemic cretinism. Iodine nutrition in health and disease.* J.B. Stanbury, and B.S. Hetzel, editors. New York: JohnWiley publ. 219-236.
- 63 . Gaitan, E. 1989. Environmental goitrogenesis. Boca Raton: CRC Press publ. 1-250 pp.
104. Dumont, J.E., Ermans, A.M., Maenhaut, G., Coppée, F., and Stanbury, J.B. 1995. Large goiter as a maladaptation to iodine deficiency. *Clin. Endocrinol.* 43:1-10.
- 64 . Delange, F., Bastani, S., Benmiloud, M., DeMaeyer, E., Isayama, M.G., Koutras, D., Muzzo, S., Niepomnische, H., Pandav, C.S., and Riccabona, G. 1986. Definitions of endemic goiter and cretinism, classification of goiter size and severity of endemias, and survey techniques. In *Towards the eradication of endemic goiter, cretinism and iodine deficiency.* J.T. Dunn, E. Pretell, C.H. Daza, and F.E. Viteri, editors. Washington : Pan American Health Organization, PAHO Sc. Publ. 373-376.
- 65 . WHO, UNICEF, and ICCIDD. 1994. Indicators for assessing Iodine Deficiency Disorders and their control through salt iodization. Geneva: WHO publ. WHO/NUT/94.6. 1-55 pp.
- 66 . Delange, F., Benker, G., Caron, P., Eber, O., Ott,W., Peter, F., Podoba, J., Simescu, M., Szybinski, Z., Vertongen, F., et al. 1997. Thyroid volume and urinary iodine in European schoolchildren : standardization of values for assessment of iodine deficiency. *Eur. J. Endocrinol.* 136 :180-187.
- 67 . Delange, F., Bürgi, H., Chen, Z.P. and Dunn, J.T. 2002. World status of monitoring of iodine deficiency disorders control programs. *Thyroid* 12 :915-924.
- 68 . Dumont, J.E., Ermans, A.M., Maenhaut, G., Coppée, F., and Stanbury, J.B. 1995. Large goiter as a maladaptation to iodine deficiency. *Clin. Endocrinol.* 43:1-10.
- 69 . van den Briel, T., West, C.E., Hautvast, J.G.A.J., Vulsma, T., De Vijlder, J.J.M. and Ategbo, E.A. 2001. Serum thyroglobulin and urinary iodine concentration are the most appropriate indicators of iodine status and thyroid function under conditions of increasing iodine supply in schoolchildren in Benin. *J. Nutr.* 131 :2701-2706.
- 70 . Delange, F. 1998. Screening for congenital hypothyroidism used as an indicator of IDD control. *Thyroid* 8:1185-1192.
- 71 . Delange, F. 1999. Neonatal thyroid screening as a monitoring tool for the control of iodine deficiency. *Acta Padiat. Scand. Suppl.* 432:21-24. 45

72. Belcher EH, Vetter H, eds. Radioisotopes in Medical Diagnosis. London: Butterworths; 1971.
73. Brown BH, Smallwood RH, Barber DC, Lawford PV, Hose DR, eds. Medical Physics and Biomedical Engineering. Bristol: Institute of Physics; 1999: 183–184.
74. Fred A. Mettler, Jr. Milton J. Cuiberteau, Essentials of Nuclear Medicine Imaging, W.B. Saunders company, 4th edition.
75. Sutton, David. A Text Book of Radiology & Imaging Churchill Livingstone 7th edition 2003. (P= 1504).
- 76 .1. Blum, M.: Evaluation of Thyroid Function; Sonography, Computed Tomography and Magnetic Resonance Imaging. in: PRINCIPLES AND PRACTICE OF ENDOCRINOLOGY AND METABOLISM, (Becker, K.L., ed.), 1990; Lippincott Co. Philadelphia, Pa. Philadelphia, p. 289 - 293.
- 77 . Van Herle AJ, Pick P, Ljung BME, Ashcraft MW, Solomon DH, Keeler EB. The thyroid nodule. Ann Intern Med. 1982; 96:221-232.
- 78 . Leopold, G R. Ultrasonography of superficially located structures. Radiol Clin North Am. 1980; 18: 161.
79. Butch R.J., Simeone J.F., Mueller P.R.: Thyroid and parathyroid ultrasonography. Radiol Clin North Am. 1995; 23: 57.
- 80 . Jakobsen JA. Ultrasound contrast agents: clinical applications. European Radiology. 2001; 11: 1329-37.
- 81 . Foley W.D. Color Doppler Flow Imaging. 1991 Andover Medical Publishers, Inc.; Boston, Mass, Ch 1.
- 82 . Clarke, DK, Cronan J, and Scola F. Color Doppler Sonography: Anatomic and Physiologic Assessment of the Thyroid. J. Clin. US. 1995; 23(4) 215-223.
- 83 . Tollin SR, Mery GM, Jelveh N, Fallon EF, Mikhail M, Blumenfeld W, et al. The use of fine-needle aspiration biopsy under ultrasound guidance to assess the risk of malignancy in patients with a multinodular goiter. Thyroid 2000; 10:235-41
- 84 . Marqusee E, Benson CB, Frates MC, Doubilet PM, Larsen PR, Cibas ES, Mandel SJ. Usefulness of Ultrasonography in the Management of Nodular Thyroid Disease. Ann Internal Med 2000 133: 696-700
- 85 . Knudsen N, Bols B, Bulow I, Jorgensen T, Perrild H, Ovesen L, Laurberg P. Validation of ultrasonography of the thyroid gland for epidemiological purposes. Thyroid 1999 9: 1069-1074
- 86 . Blum M., Passalacqua A. M., Sackler J., Pudiowski R: Thyroid echography of subacute thyroiditis. Radiology. 1977; 124: 795-799.
- 87 . Hiramatsu Y, Ishibashi M, Miyake I, Soyejima E, Yamashita K, Koike N, Nonaka K Color Doppler ultrasonography in patients with subacute thyroiditis. Thyroid 1999 9: 1189-1193

- 88 . Espinasse P.: Le'echographie thyroïdienne dans les thyroidites lymphocytaires chroniques autoimmunes. *J. Radiol.* 1983; 64: 537-544.
- 89 . Hayashi N, Tamaki N, Konlshi J, et al.: Sonography of Hashimoto's thyroiditis. *J Clin Ultrasound.* 1986; 14: 123-126.
- 90 . Jayaran G, Marwaha RK, Gupta RK, Sharma SK.: Cytomorphologic aspects of thyroiditis. A study of 51 cases with functional, immunologic and ultrasonographic data. *Acta Cytol.* 1987; 31: 687-693.
91. Gutenkust R, Hafermann W, Mansky T, Scriba PC.: Ultrasonography related to clinical and laboratory findings in lymphocytic thyroiditis. *Acta Endocrinol (Copenh).* 1989; 121: 129-135.
- 92 . Marcocci C., Vitti P., Cetani F., Catalano F., Concetti R., Pinchera A.: Thyroid Ultrasonography Helps to Identify Patients with Diffuse Lymphocytic Thyroiditis who Are Prone to Develop Hypothyroidism. *J Clin Endocr and Metabol.* 1991; 72: 209 - 213.
- 93 . Ansaldo GL, Pretolesi F, Varaldo E, Meola C, Minuto M, Borgonovo G, Derchi LE, Torre GC. Doppler evaluation of intrathyroid arterial resistances during preoperative treatment with Lugol's iodide solution in patients with diffuse toxic goiter. *Journal of the American College of Surgeons.* 2000; 191: 607-12.
94. Solbiati, L., Rizzatto, G., Bellotti, E., et al. : High resolution sonography of cervical lymph nodes in head and neck cancer: criteria for differentiation of reactive versus malignant nodes (abstr). *Radiology* 1988; 169(P), 113.
- 95 . Chang DB, Yuan A, Yu CJ, et al.: Differentiation of benign and malignant cervical lymph nodes with color Doppler sonography. *Am J Roentg* 1994; 162: 965-968.
96. Gordon DL, Flisak M, Fischer SG. Changes in Thyroid volume caused by fine-needle aspiration: a factor complicating the interpretation of the effect of thyrotropin suppression on nodule size. *J Clin Endocrinol Metabol* 1999; 84: 4566-4569
- 97 . Rizzatto G, Solbiati L., Croce F. , Derci L E. Aspiration Biopsy of Superficial Lesions: Ultrasonic Guidance with a Linear-Array Probe, *AJR.* 1987; 148: 623-625.
- 98 . Matalon, T.A.S., Silver, B. US Guidance of Interventional Procedures *Radiology.* 1990; 174, 43 - 47.
- 99 . Boland, G.W., Lee, M. J.,Mueller, P.R., Mayo-Smith, W., Dawson,S L., Simeone, J. F. Efficacy of sonographically guided biopsy of thyroid masses and cervical lymph nodes. *AJR.* 1993; 161, 1053-1056
- 100 . Takashima,S., Yoshida ,J., Kishimoto, H., Matsushita, M., Oi, H., Okamoto, S. () Nonpalpable lymph nodes of the neck: Assessment with US and US-guided fine-needle aspiration biopsy. *Radiology.* 1995; 197: Suppl.Abstr. RSNA , 270.
- 101 . Gharib H, Goellner JR, Johnson DA.: FNA cytology of the thyroid: a 12 year experience with 11,000 biopsies. *Clin Lab Med* 1995; 13: 699-710.

- 102 . Morine M, Takeda T, Minekawa R, Sugiyama T, Wasada K, Mizutani T, Suehara N. Antenatal diagnosis and treatment of a case of fetal goitrous hypothyroidism associated with high-output cardiac failure. *Ultrasound in Obstetrics & Gynecology*. 2002; 19: 506-509.
- 103 . Perry RJ, Hollman AS, Wood AM, Donaldson MD. Ultrasound of the thyroid gland in the newborn: normative data. *Archives of Disease in Childhood Fetal & Neonatal Edition*. 2002; 87: 209-211.
- 104 . Knudsen, N, Bols, B, Bulow, I, et al. Validation of ultrasonography of the thyroid gland for epidemiological purposes. *Thyroid* 1999; 9: 1069.
- 105 . Casadei R, Perenze B, Vescini F, Piccoli L, Zanini N, Minni F. Usefulness of the ultrasonically activated shears in total thyroidectomy. *Chir Ital*. 2004; 56: 843-8.
- 106 ..Gharib H: Changing concepts in the diagnosis and management of thyroid nodules. *Endocrinol Metab Clin North Am* 26:777-800, 1997
- 107 . Mazzaferri EL: Management of a solitary thyroid nodule. *NEngl J Med* 328:553-559, 1993
- 108 . Burch HB: Evaluation and management of the solid thyroid nodule. *Endocrinol Metab Clin North Am* 24:663-710, 1995
- 109 . Daniels GH: Thyroid nodules and nodular thyroids: a clinical overview. *Compr Ther* 22:239-250, 1996
- 110 . Gharib H: Fine-needle aspiration biopsy of thyroid nodules: advantages, limitations, and effect. *Mayo Clin Proc* 69:44-49, 1994
- 111 . Solomon BL, Wartofsky L, Burman KD: Current trends in the management of well differentiated papillary thyroid carcinoma. *J Clin Endocrinol Metab* 81:333-339, 1996
- 112 . Martin HE, Ellis EB: Biopsy by needle puncture and aspiration. *Ann Surg* 92:169-181, 1930
- 113 . Backdahl M, Wallin G, Lowhagen T, Auer G, Granberg PO: Fine-needle biopsy cytology and DNA analysis: their place in the evaluation and treatment of patients with thyroid neoplasms. *Surg Clin North Am* 67:197-211, 1987
- 114 . Gharib H: Management of thyroid nodules: another look. *Thyroid Today* 1:1-11, 1997
- 115 . Goellner JR, Gharib H, Grant CS, Johnson DA: Fine needle aspiration cytology of the thyroid, 1980 to 1986. *Acta Cytol* 31:587-590, 1987
- 116 . Atkinson BF: Fine needle aspiration of the thyroid. *Monogr Pathol* 35:166-199, 1993
- 117 . Solomon D: Fine needle aspiration of the thyroid: an update. *Thyroid Today* 16:1-9, 1993
- 118 . Oertel YC: Fine-needle aspiration and the diagnosis of thyroid cancer. *Endocrinol Metab Clin North Am* 25:69-91, 1996
- 119 . Singer PA: Evaluation and management of the solitary thyroid nodule. *Otolaryngol Clin North Am* 29:577-591, 1996
120. Powers CN, Frable WJ: *Fine-Needle Aspiration Biopsy of the Head and Neck*. Boston, Butterworth-Heinemann, 1996

- 121 . Hamburger JI: Diagnosis of thyroid nodules by fine needle biopsy: use and abuse. *J Clin Endocrinol Metab* 79:335-339, 1994
- 122 . Santos JE, Leiman G: Nonaspiration fine needle cytology. Application of a new technique to nodular thyroid disease. *Acta Cytol* 32:353-356, 1988
- 123 . Hales MS, Hsu FS: Needle tract implantation of papillary carcinoma of the thyroid following aspiration biopsy. *Acta Cytol* 34:801-804, 1990
- 124 . Giuffrida D, Gharib H: Controversies in the management of cold, hot, and occult thyroid nodules. *Am J Med* 99:642-650, 1995
- 125 . Baloch ZW, LiVolsi VA: Fine-needle aspiration of thyroid nodules: past, present, and future. *Endocr Pract* 10:234-241, 2004
- 126.Kron T. Thermoluminescence dosimetry and its applications in medicine - part 1: physics, materials and equipment. *Australas Phys Eng Sci Med.* 1994; 17:175-199.
- 127.Macnamara BSc and P Hoskins PhD, thesis on patient radiation dose during lithotripsy, medical physics department,UK 72 (1999).
- 128.16 Kambal Ali 1986, Endemic Goitre in Darfur Province, M.Sc. Thesis, Faculty of Medicine, University of Khartoum
- 129 .22 Mukhtar E., Congenital Dyshormonogenesis as a Possible Aetiological Factor in the Development in Some Cases of Goitre in the Sudan, *Sudan Med. J.*, 1974, Vol. 12, No.2, P 16-21
- 130 .14 .Hidayatalla, ElDaw Mukhtar, E.S., A. Rahman, E.A. and I.A/ Rahman, Radioiodine Treatment of Thyrotoxicosis, *Sudan Med. J.*, vol 12, 1974, No. 1-2, P 47-53
- 131.21 .Mukhtar E. 1980, Studies on the Pathogenesis of Graves' Disease, MD, Faculty of Medicine , University of Khartoum, March
132. 7 .Elgizouli. S. E. 1987, The Solitary Thyroid Nodule in Khartoum Teaching Hospital, M.Sc. Thesis, Faculty of Medicine, University of Khartoum
- 133 .[Omran M](#), [Ahmed ME](#), Carcinoma of the thyroid in Khartoum, [East Afr Med J.](#) 1993 Mar;70(3):159-62.
- 134 . [Clark KJ](#), [Cronan JJ](#), [Scola FH](#), Color Doppler sonography: anatomic and physiologic assessment of the thyroid , [J Clin Ultrasound.](#) 1995 May;23(4):215-23.
- 135 . [Kresnik E](#), [Gallowitsch HJ](#), [Mikosch P](#), [Molnar M](#), [Pipam W](#), [Gomez I](#), [Lind P](#), Evaluation of thyroid nodules with technetium-99m tetrofosmin dual-phase scintigraphy, [Eur J Nucl Med.](#) 1997 Jul;24(7):716-21.
- 136 . [Sharma R](#), [Chakravarty KL](#), [Tripathi M](#), [Kaushik A](#), [Bharti P](#), [Sahoo M](#), [Chopra MK](#), [Rawat H](#), [Misra A](#), [Mondal A](#), [Kashyap R](#), Role of 99mTc-Tetrofosmin delayed scintigraphy and color Doppler sonography in characterization of solitary thyroid nodules, [Nucl Med Commun.](#) 2007 Nov;28(11):847-51.
137. [Kresnik E](#), [Gallowitsch HJ](#), [Mikosch P](#), [Unterweger O](#), [Gomez I](#), [Lind P](#), Scintigraphic and ultrasonographic appearance in different tumor stages of thyroid carcinoma, [Acta Med Austriaca.](#) 2000;27(1):32-5.
- 138 . [Bashier AH](#), [Abdin I](#), [Elhassan M](#), [Sanhoury M](#), [Ahmed ME](#), Solitary thyroid nodule in Khartoum, [East Afr Med J.](#) 1996 Oct;73(10):694-6.

- 139 . [Park M](#), [Shin JH](#), [Han BK](#), [Ko EY](#), [Hwang HS](#), [Kang SS](#), [Kim JH](#), [Oh YL](#). Sonography of thyroid nodules with peripheral calcifications, [J Clin Ultrasound](#). 2009 Jul-Aug;37(6):324-8.
- 140 . [Popowicz B](#), [Klencki M](#), [Lewiński A](#), [Słowińska-Klencka D](#), The usefulness of sonographic features in selection of thyroid nodules for biopsy in relation to the nodule's size, [Eur J Endocrinol](#). 2009 Jul;161(1):103-11. Epub 2009 Apr 17.
- 141 . [Gul K](#), [Ersoy R](#), [Dirikoc A](#), [Korukluoglu B](#), [Ersoy PE](#), [Aydin R](#), [Ugras SN](#), [Belenli OK](#), [Cakir B](#), Ultrasonographic evaluation of thyroid nodules: comparison of ultrasonographic, cytological, and histopathological findings, [Endocrine](#). 2009 Oct 27
- 142 . Sohaib M1, Saeed S1, Naseeb HK1, Hyder SW2, Correlation of Single Image Tc-99m MIBI Scan and Ultrasonography with Fine Needle Aspiration Cytology (FNAC) to assess Neoplasia in Solitary “Cold” Thyroid Nodules, [World J Nucl Med](#) 2007;6:87-91
- 143 . Greaves CD, Tindale WB, Dose rate measurements from radiopharmaceuticals: implications for nuclear medicine staff and for children with radioactive parents, [Nucl Med Commun](#). 1999 Feb;20(2):179-87.
- 144 . Gauri S. Pant¹, Sanjay K. Sharma¹, and Gaura K. Rath, Finger Doses for Staff Handling Radiopharmaceuticals in Nuclear Medicine , [JOURNAL OF NUCLEAR MEDICINE TECHNOLOGY](#) • Vol. 34 • No. 3 • September 2006
- 145 . Mountford PJ, O'Doherty MJ, Forge NI, Jeffries A, Coakley AJ. Radiation dose rates from adult patients undergoing nuclear medicine investigations, [Nucl Med Commun](#). 1991 Sep;12(9):767-77.
- 146 . Mountford PJ, O'Doherty MJ, Harding LK, Thomson WH, Carter NJ, Bray D, Paul C, Batchelor S. Radiation dose rates from paediatric patients undergoing 99Tcm investigations, [Nucl Med Commun](#). 1991 Aug;12(8):709-18.
- 147 . Thea M. Lundberg, NMT; Peta J. Gray, and Marissa L. Bartlett, Measuring and Minimizing the Radiation Dose to Nuclear Medicine Technologists , [J Nucl Med Technol](#) 2002; 30:25–30
- 148 . Benjamin Guillet,;Pierre Quentin, Serge Waultier, Marc Bourrelly, Pascale Pisano, and Olivier Mundler, Technologist Radiation Exposure in Routine Clinical Practice with 18F-FDG PET, [J Nucl Med Technol](#) 2005; 33:175–179
- 149 . [Gul K](#), [Ersoy R](#), [Dirikoc A](#), [Korukluoglu B](#), [Ersoy PE](#), [Aydin R](#), [Ugras SN](#), [Belenli OK](#), [Cakir B](#), Ultrasonographic evaluation of thyroid nodules: comparison of ultrasonographic, cytological, and histopathological findings, [Endocrine](#). 2009 Oct 27
- 150 . Huda W, Gordon K, Nuclear medicine staff and patient doses in Manitoba (1981-1985), [Health Phys](#). 1989 Mar;56(3):277-85.
- 151 . Gordana Ivanac¹, Berislav Ro`man², Franjo [kreb², Boris Brklja~i¹]and Ladislav Pavi Ultrasonographic Measurement of the Thyroid Volume Coll. Antropol. 28 (2004) 1: 287–291
- 152 . A. Ahidjo, A. Tahir & M. Tukur Ultrasound Determination Of Thyroid Gland Volume Among Adult Nigerians . [The Internet Journal of Radiology](#). 2006 Volume 4 Number 2

- 153 . J. P. Chanoine, V. Toppet, R. Lagasse, M. Spehl and F. Delange , Determination of thyroid volume by ultrasound from the neonatal period to late adolescence, [European Journal of Pediatrics](#) Volume 150, Number 6 /, 1993:395-399
- 154 . A Brander, P Viikinkoski, J Nickels and L Kivisaari, Thyroid gland: US screening in a random adult population, *Radiology*, Vol 181, 683-687
- 155 . Atoosa Adibi, Mehri Sirous, Ashraf Aminorroaya, Ehsan Roohi, Mohsen Mostafavi, Zahra Fallah , Azamossadat Tabatabaei, Massoud Amini Normal values of thyroid gland in Isfahan, an iodine replete area, *JRMS* 2008; 13(2): 55-60
- 156 . Gomez, Jose Manuel , Maravall, Francisco Javier , Gomez, Nuria , Guma, Anna , Soler, Juan Determinants of thyroid volume as measured by ultrasonography in healthy adults randomly selected, *Clinical Endocrinology*. 53(5):629-634, November 2000.
157. Nagi
- 158 Christensen, S.B., Bondeson L., Ericsson, UB. And Lindholm, K., Prediction of Malignancy in Thyroid Nodules, *Acta chiv*, Second., 150, 433-439
- 159 Eltom, M.A., Hofrander, Y., Terelm, I. and Tellstrom, B. 1984. Endemic Goitre in Darfur Region, *Acta Med.scand.*, 215, 467-75
- 160 David E., P.A. Vice, F.Clark, The Investigation of Thyroid Disease, The Radiochemical Center Amersham England, P22
- 161 Kapur, M.M., Senda, A.K., Kumar, A. 1980, The Cold Solitary Thyroid Nodule, *Indian J. cancer*, 179, P 172-175
- 162 Kheir, A.M., Ahmed, M.E. Mmahdi, E.M.A., Yagi, K. Hassan, M.A. and Mukhtar, E 1984. The Pattern of Thyroid Diseases in Khartoum Teaching Hospital, M.Sc. Thesis, Faculty of Medicine, University of Khartoum
- 163 Elfeil, M.S. and Ahmed, M.E. 1984. The Clinically Solitary Thyroid Nodule in Senar, in press.
- 164 .Evered, D.C., Ormston, B.J., Smith, P.A., Hall, R. and Bird, T. Grade of Hypothyroidism, *B.M.J.*, I, 1973, P 657-662
- 165 Cooper DS, Doherty GM, Haugen BR, et al. Management guidelines for patients with thyroid nodules and differentiated thyroid cancer. *Thyroid* 2006;16:1-33.
- 166 Mazzaterri EL. Management of a solitary thyroid nodule. *N Engl J Med* 1993;328:553-9.
- 167 Ezzat S, Sarti DA, Cain DR, Braunstein GD. Thyroid incidentalomas. Prevalence by palpation and ultrasonography. *Arch Intern Med* 1994;154:1838-40.
- 168 Mackenzie EJ, Mortimer RH. Thyroid nodules and thyroid cancer. *Med J Aust* 2004;180:242-7.
- 169 Frates MC, Benson CB, Doubilet PM, et al. Prevalence and distribution of carcinoma in patients with solitary and multiple thyroid nodules on sonography. *J Clini Endocrinol Metab* 2006;91:3411-7.
- 170 Hilditch TE, Elliott AT, Anstee DE, Murray T. Fifteen years of radiological protection experience in a regional radiopharmacy. *Health Phys.* 1990;59: 109-116.

- 171 Jansen SE, van Aswegen A, Lotter MG, Herbst CP, Otto AC. Staff radiation doses during eight years in a nuclear medicine radiopharmacy. *Nucl Med Commun*. 1994;15:114–118
- 172 Massol J, Pazart L, Aho S, Strauch G, Leclere J, Durieux P. Management of the thyroid nodule: preliminary results of a practice survey of 685 general practitioners and specialists [in French]. *Ann Endocrinol* 1993; 54:220–225
- 173 Bruneton JN, Balu-Maestro C, Marcy PY, Melia P, Mourou MY. Very high frequency (13 MHz) ultrasonographic examination of the normal neck: detection of normal lymph nodes and thyroid nodules. *J Ultrasound Med* 1994; 13:87–90
- 174 World Health Organization. *Indicators for assessing iodine deficiency disorders and their control through salt iodization*. Geneva, Switzerland:World Health Organization, 1994 [Document No. WHO/NUT94.6]
- 175 [No authors listed] Recommended normative values for thyroid volume in children aged 6–15 years: World Health Organization and International Council for Control of Iodine Deficiency Disorders. *Bull World Health Organ* 1997; 75:95–97
- 176 Brown MC, Spencer R. Thyroid gland estimated by use of ultrasound in addition to scintigraphy. *Acta Radiol Oncol Radiat Phys Biol* 1978; 17:337–341
- 177 Brunn J, Block U, Ruf G, Bos I, Kunze WP, Scriba PC. Volumetric analysis of thyroid lobes by realtime ultrasound (author's translation) [in German]. *Dtsch Med Wochenschr* 1981; 106:1338–1340
- 178 Archie A, Alexander MD. The thyroid, the parathyroid, the salivary glands and the cervical lymphnodes. In: The NICER year Book 1996 (Eds. Goldberg B, Petterson H). The NICER Institute. Oslo. 1996; 399-429.
- 179 Iko BO. Grey scale ultrasonography of the thyroid gland, Nigeria. *Trop Geogr Med*. 1986;38(1): 21-7.
- 180 Anele T. Ultrasound volumetric measurement of normal thyroid in Nigerians. *West Afri J Ultras*. 2001; 2(1): 10-12.
- 181 Ryan SP, Nicholas NMJ. The Thyroid and Parathyroid Glands. In: Anatomy for diagnostic imaging (Eds. Ryan SP, Nicholas NMJ). W.B Saunders. Philadelphia. 1994; 35-37.
- 182 Tahir A, Ahidjo A and Yusuph H. Ultrasonic assessment of thyroid gland size in Maiduguri, Nigeria. *West Afri J Ultras*. 2001;3(1): 26-31.
- 183 Nifikudin M. Portable ultrasound thyroid survey. *Ultrasound clinical magazine from Medison. Sonoace International*. 1996;3: 38-42.
- 183 Azizi F, Malic M, Bebers E, Delshad H, Bakir A. Thyroid volumes in School Children of the Emerates. *J Endocrinol Invest*. 2003;26(1): 56-60.
- 184 Jamesone JL, Weetman AP. Disorders of the Thyroid Gland. In: Harrison's Principles of Internal Medicine (Eds. Braunwald E, Fauci AS, Kasper DL, et al).15th Ed. Mc Graw-Hill. Newyork. 2001;2060-1.
- 185 Rasmussen NG, H.ornnes PJ, Hegedus L Ultrasonographically determined thyroid size in pregnancy: postpartum: the goitrogenic effect of pregnancy. *Am J Obstet Gynecol*. 1989;160(5): 1216-20.

- 186 Nelson M, Wickus GG, Caplan RH, Beguin EA. Thyroid gland size in pregnancy. An ultrasound and clinical study. *J Reprod Med.* 1987;32(12): 888-90.
- 187 Hegedus L, Karstrup S, Rasmussen NG. Evidence of cyclical alterations thyroid size during menstrual cycle in healthy women. *Am J Obstet Gynecol.* 1986;155(1): 142-5.
- 188 Ahidjo A, Tahir A, Tukur M. Ultrasound Determination of Thyroid Gland Volume Among Adult Nigerians. *The Internet Journal of Radiology* 2006;4[2]. Available at URL: www.ispub.com/ostia/index.php?xmlFilePath=journals/ijra/vol4n2/thyroid.xml
- 189 Gutekunst R, Smolarek H, Hasenpusch U, Stubbe P, Friedrich HJ, Wood WG et al. Goitre epidemiology: thyroid volume, iodine excretion, thyroglobulin and thyrotropin in Germany and Sweden. *Acta Endocrinol (Copenh)* 1986;112:494-501.
- 190 Busnardo B, Nacamulli D, Frigato F, Vianello-Dri A, De Vido D, Mian C et al. Normal values for thyroid ultrasonography, goiter prevalence and urinary iodine concentration in schoolchildren of the Veneto Region, Italy. *J Endocrinol Invest* 2003;26:991-996.
- 191 Gomez JM, Maravall FJ, Gomez N, Guma A, Soler J. Determinants of thyroid volume as measured by ultrasonography in healthy adults randomly selected. *Clin Endocrinol (Oxf)* 2000;53:629-634.
- 192 Knudsen N, Bulow I, Jorgensen T, Laurberg P, Ovesen L, Perrild H. Goitre prevalence and thyroid abnormalities at ultrasonography: a comparative epidemiological study in two regions with slightly different iodine status. *Clin Endocrinol (Oxf)* 2000;53:479-485.
- 193 Barrere X, Valeix P, Preziosi P, Bensimon M, Pelletier B, Galan P et al. Determinants of thyroid volume in healthy French adults participating in the SU. VI. MAX cohort. *Clin Endocrinol (Oxf)* 2000;52:273-278.
- 194 Markou KB, Georgopoulos NA, Anastasiou E, Vlasopoulou B, Lazarou N, Vagenakis GA et al. Identification of iodine deficiency in the field by the rapid urinary iodide test: comparison with the classic Sandell-Kolthoff reaction method. *Thyroid* 2002;12:407-410.
- 195 Hegedus L, Perrild H, Poulsen LR, Andersen JR, Holm B, Schnohr P et al. The determination of thyroid volume by ultrasound and its relationship to body weight, age, and sex in normal subjects. *J Clin Endocrinol Metab* 1983;56:260-263.
- 196 Arriaga MA, Myers EN. Ectopic thyroid in the retro esophageal superior mediastinum. *Otolaryngol Head Neck Surg* 1988; 99:338-40.
- 197 Baldwin RL, Copeland SK. Lingual thyroid and associated epilogist. *South Med J* 1988; 81:1538-41.
- 198 Larochelle D, Arcand P, Belzile M, Gagnon NB. Ectopic thyroid tissue - A review of the literature. *J Otolaryngol* 1979; 8:523-30.
- 199 Moore KL, Dalley AF. Clinically Oriented Anatomy. 5th ed. Philadelphia: Lippincott Williams and Wilkins, 2006: 1083-5.
- 200 Bergman RA, Afifi AK, Miyauchi R. Thyroid gland. In: Illustrated Encyclopedia of Human Anatomic Variation: Opus IV: Organ Systems: Endocrine System. Available at: www.anatomyatlases.org/AnatomicVariants/OrganSystem/Text/ThyroidGland.shtml. Accessed. August 12, 2007.

- 201 Sand J, Pehkonen E, Mattila J, Seppanen S, Salmi J. Pulsating mass at the sternum: a primary carcinoma of ectopic mediastinal thyroid. *J Thorac Cardiovasc Surg* 1996; 112: 833-5.
- 202 Casanova JB, Daly RC, Edwards BS, Tazelaar HD, Thompson GB. Intracardiac ectopic thyroid. *Ann Thorac Surg* 2000; 70:1694-6.
- 203 Bando T, Genka K, Ishikawa K, Kuniyoshi M, Kuda T. Ectopic intrapulmonary thyroid. *Chest* 1993; 103:1278-9.
- 204 Feller KU, Mavros A, Gaertner HJ. Ectopic submandibular thyroid tissue with a coexisting active and normally located thyroid gland: case report and review of literature. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2000; 90:618-23.
- 205 Hari CK, Brown MJ, Thompson I. Tall cell variant of papillary carcinoma arising from ectopic thyroid tissue in the trachea. *J Laryngol Otol* 1999;113:183-5.
- 206 Takahashi T, Ishikura H, Kato H, Tanabe T, Yoshiki T. Ectopic thyroid follicles in the submucosa of the duodenum. *Virchows Arch A Pathol Anat Histopathol* 1991; 418:547-50.
207. Cerbone G, Spiezia S, Colao A, Di Sarno et al (1999) Power Doppler improves the diagnostic accuracy of color Doppler ultrasonography in cold thyroid nodules: follow-up results. *Hormone Research* 52(1):19–24
208. Papini E, Guglielmi R, Bianchini A, Crescenzi A et al (2002) Risk of malignancy in nonpalpable thyroid nodules: predictive value of ultrasound and color Doppler features. *J Clin Endocrinol Metab* 87(5):1941–1946
209. Berni A, Tromba L, Falvo L, Marchesi M et al (2002) Malignant thyroid nodules: comparison between color Doppler diagnosis and histological examination of surgical samples. *Chir Ital* 54(5):643–647
210. Frates MC, Benson CB, Doubilet PM, Cibis ES, Marqusee E (2003) Can color Doppler sonography aid in the prediction of malignancy of thyroid nodules? *J Ultrasound Med* 22:127–131

