

P63 immunohistochemistry expression in concurrence with bi-rads 4 subcategory in breast lesions**H. Lalchhanhimi***Sri Ramachandra Institute of Higher Education and Research, Chennai India*

Mammography is regarded as the gold standard for breast cancer screening and detection. However, the use of immunohistological markers can help in guiding treatment decisions and classifying breast cancers into subtypes that are biologically distinct and behave differently as they can act as both prognostic and predictive factors. Among the various biochemical markers used to diagnose breast cancer, p63 has become well-known for its ability to detect myoepithelial cells, a key sign of breast benignity. In this study, we will statistically analyze and correlate the breast lesion grading on mammography imaging with p63 immunostaining using the Breast Imaging Reporting and Data System (BI-RADS). After confirming that the inclusion and exclusion criteria were met, 80 patients were enrolled in the study for two years (2016-2018). They were then divided into BI-RADS 4 subcategories, taking into account a variety of factors i.e., X-ray mammogram and tomosynthesis findings, 57 samples were categorized as low suspicion (BI-RADS 4A), while 12 were classified as intermediate (BI-RADS 4B) and the remaining 11 samples were categorized as highly suspicious (BI-RADS 4C). Our study has concluded that p63 is a sensitive and specific myoepithelial marker. All invasive breast carcinoma were devoid of p63 while it was positive in all benign cases. Also, in all in situ cases, p63 was positive at the periphery representing the rim of myoepithelial cells.

Biography

Miss H. Lalchhanhimi is currently pursuing her Ph. D at Sri Ramachandra Institute of Higher Education and Research at Chennai, India. She has given a number of oral and poster presentations both in the national and international levels and also published papers in reputed journals.

An unusual case of desmoid tumor of the neck after total thyroidectomy and radioiodine therapy for papillary thyroid carcinoma

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Statement of the problem: the differential diagnosis of the neck lumps after total thyroidectomy for differentiated thyroid carcinoma is always a continuous and surprising challenge. Desmoid fibromatosis is an uncommon neoplasm characterized by extensive stromal proliferation of fibroblasts and myofibroblasts that usually develops as a part of an ereditary syndrome or more frequently, in a sporadic form, often after a local trauma. In this case, a locally aggressive desmoid fibromatosis developed in the thyroid bed after total thyroidectomy and radioiodine therapy (RAIU) for a classic papillary thyroid carcinoma (PTC). A 42-year- old woman was referred to our endocrine unit because of onset of worsening dysphagia, dyspnea and cough three months after total thyroidectomy and RAIU for a previously diagnosed classic PTC. A palpable firm mass in the neck was detected at clinical examination and ultrasound imaging (US) revealed an hypoechoic inhomogeneous mass in left thyroid bed. Serum ultrasensitive thyroglobulin (Tg) and thyroglobulin autoantibodies (TgAb) were both undetectable. Fine needle aspiration of the mass and Tg dosage on the wash-out liquid of the needle excluded the persistence/recurrence of PTC in thyroid left bed. The evidence of tracheal dislocation and compression at computed tomography (CT) scan indicated surgery. Any way only partial excision of the mass was possible because of tracheal adhesion. Diagnosis of desmoid tumor was made at pathology and patient was referred to the oncologic unit. Chemotherapy (vinorelbine and methotrexate) plus tamoxifen were started. Six months after CT and US revealed a significant reduction of the mass. Actually patient is on levothyroxine treatment (100mcg/die), ultrasensitive Tg is <0.1, TgAb <10UI/mL, indicating an excellence response to primary treatment of papillary thyroid carcinoma. Conclusions: desmoid fibromatosis should be take into account in the differential diagnosis of any souspicious mass in the thyroid bed.

Thyroid Cancer, Radioactive iodine and Female Fertility**Sandra Rocher***Reina Sofia Hospital, Murcia, Spain*

Radioactive iodine (I131) is used after surgery in the treatment of Differentiated Thyroid Carcinoma (DTC). There is no solid evidence about the potential deleterious effect of I131 on women fertility. The objective of this study is to assess the impact that I131 may have on fertility in women. All women followed by DTC in our department have been analyzed and women younger than 45 years old at the time of diagnosis and initial treatment were included. There were 40 women exposed to I131 (study group) and 11 women who were only treated with thyroidectomy (control group). Of the women exposed to I131, 40% went through early menopause, while no cases were reported among their controls. Furthermore, 29.2% of women exposed to I131 had decreased Antimüllerian Hormone (AMH), compared to the only 11% of unexposed women (not significant). Regarding the fertility impairment "perceived" by patients, in the group of women exposed to iodine, 17.9% described being unable to complete their genetic desire whereas, none was registered in the control group. We conclude that radioactive iodine can affect a woman's fertility and shorten her reproductive life, so this is an aspect that should be taken into consideration.

Biography

Sandra Rocher has completed her Medicine Degree at the age of 24 years at Valencia University. Nowadays she is coursing the Gynecology and Obstetrics Residency in Reina Sofia Hospital and Virgen de la Arrixaca Hospital. She has published more than 25 posters in reputed international conferences and recently she has published a research article in Nature Scientific Reports Journal. Currently she is working in more research projects in the area of Gynecological endocrinology.

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A Comparative Knowledge base development for Cancerous cell detection by deep learning and fuzzy computer vision tool box**Subhasish Mohapatra***Adamas University, India*

As cancer cells spread in a culture dish, Guillaume Jacquemet is watching. The cell movements hold clues to how drugs or gene variants might affect the spread of tumours in the body, and he is tracking the nucleus of each cell in frame after frame of time-lapse microscopy films. But because he has generated about 500 films, each with 120 frames and 200–300 cells per frame, that analysis is challenging to say the least. “If I had to do the tracking manually, it would be impossible,” says Jacquemet, a cell biologist at Åbo Akademi University in Turku, Finland. So he has trained a machine to spot the nuclei instead. Jacquemet uses methods available on a platform called ZeroCostDL4Mic, part of a growing collection of resources aimed at making artificial intelligence (AI) technology accessible to bench scientists who have minimal coding experience¹. AI technologies encompass several methods. One, called machine learning, uses data that have been manually preprocessed and makes predictions according to what the AI learns. Deep learning, by contrast, can identify complex patterns in raw data. It is used in self-driving cars, speech-recognition software, game-playing computers — and to spot cell nuclei in massive microscopy data sets. Deep learning has its origins in the 1940s, when scientists built a computer model that was organized in interconnected layers, like neurons in the human brain. Decades later, researchers taught these ‘neural networks’ to recognize shapes, words and numbers. But it wasn’t until about five years ago that deep learning began to gain traction in biology and medicine. A major driving force has been the explosive growth of life-sciences data. With modern gene-sequencing technologies, a single experiment can produce gigabytes of information. The Cancer Genome Atlas, launched in 2006, has collected information on tens of thousands of samples spanning 33 cancer types; the data exceed 2.5 petabytes (1 petabyte is 1 million gigabytes). And advances in tissue labelling and automated microscopy are generating complex imaging data faster than researchers can possibly mine them. “There’s definitely a revolution going on,” says Emma Lundberg, a bioengineer at the KTH Royal Institute of Technology in Stockholm.

Biography

Cancer biologist Neil Carragher caught his first glimpse of this revolution in 2004. He was leading a team at AstraZeneca in Loughborough, UK, that explores new technologies for the life sciences, when he came across a study that made the company rethink its drug-screening efforts. He and his team had been using cell-based screens to look for promising drug candidates, but hits were hard to come by. The study was suggesting that AI and analytics could help them to improve their screening processes². “We thought this could be a solution to the productivity crisis,” Carragher says.

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Using glycosylation as a barcode to produce better and safer antibodies**Catherine Ronin***SiaMed'Xpress, France*

The number of anti-cancer antibody candidates is increasing as humanized, engineered and bispecific formats to develop drugs that will act more efficiently at a lower dose. Lessons learned from the past are not sufficient to address new challenges for producing such difficult-to-express proteins. Productivity remains the key driver for process intensification, but product quality is most than often drastically altered because cell factories poorly adapt to high density culture, sustain cell growth and high titer production. Also, from lead identification to full scale bioproduction, regulators are now requesting deeper knowledge about the process and products. So far, cancer immunotherapy has essentially focused on ADCC and CDC activities which can be increased by modifying antibody glycosylation in core fucose and galactose content respectively. Most antibodies are expressed in CHO cells which generally add excessive fucose and low galactose during bioprocesses, resulting in reduced biopotency. Accordingly, various strategies have been used including inhibitors or fucose $-/-$ cells, but these cell lines do not perform as the parental cell lines in high density bioreactors. Galactose addition is low because of a metabolic bottleneck which blocks the completion of glycans during bioproduction. Optimal glycoengineering is therefore needed to get the most efficient products. Glycosylation reflects the coordinated action of more than a hundred of synthetic enzymes on both the product and host cell proteins. Using glycosylation as a bar code for product quality can thus facilitate the overall production workflow for new candidates. At SiaMed'Xpress, we have developed a dedicated glycomonitoring to maximize product glycoprofile during early stage development. We could maximize the desired antibody glycoprofile during product development based on innovative glycotests: in our presentation, we will show that during cell line and product development, the fucose content of the antibody product can be substantially reduced and galactose largely increased. Glycomonitoring therefore provides a creative approach to maximize process consistency, make decision with confidence and without delay. It is fully complementary to current strategies in the cancer field and further aims at accelerating development timelines.

Biography

Catherine Ronin carried out a full academic career as Professor at Aix-Marseille University (France) and founded SiaMed'Xpress in 2010. She has published more than 35 papers related to TSH biological and immunological polymorphism in reputed journals and has been serving as expert, Vice Chair and Chair in Marie Curie ITN and JDP programs at the European, Research Agency over 12 years.

Frequency of Infectious Mortality at the End of Induction Chemotherapy in Acute Lymphoblastic Leukemia and Lymphoma Patients: Findings From a Tertiary Care Cancer Center

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Background and objective: In low- and low-to-middle-income countries (LMICs), the incidence of treatment-related mortality (TRM) in patients with acute lymphoblastic leukemia (ALL) and lymphoblastic lymphoma (LBL) is up to 52%. This study aimed to determine the mortality rate at the end of the induction phase of the treatment among patients with ALL and lymphoma at a tertiary care cancer center.

Methods: This retrospective study analyzed outcomes after induction chemotherapy in pediatric patients with acute leukemia and lymphoma at a tertiary care cancer center from January 2015 to December 2016. Information regarding demographics, clinical characteristics, and laboratory investigations were extracted and reviewed.

Results: Of the total 160 patients, 110 were males, and the mean age of the sample was 4.6 +2.8 years. B-cell leukemia (pre-B-ALL) was diagnosed in 84% (n=134), while 10% (n=6) had acute T-cell leukemia (pre-T-ALL) and 6% (n=10) had lymphoma. Sixteen patients (10%) died within the defined induction period, with 14 deaths occurring due to infections and two deaths resulting from chemotherapy-related toxicity.

Conclusion: Based on our findings, there is a significant prospect of mortality from infections during induction chemotherapy in patients with pediatric hematological malignancies.

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An unusual cases of intrathyroid parathyroid adenoma

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A 50-year-old woman with history of kidney stone was admitted to our hospital with diagnosis of parathyroid hormone (PTH)-mediated hypercalcemia. Her PTH was more than 1000 pg/mL (reference range 8.7 – 77.1 pg/mL). Ultrasound of the neck showed bilateral mildly ovoid structures posterior to the right and left thyroid lobes possibly enlarged parathyroid glands. She was also found to have a 2.7 cm left inferior thyroid nodule, which was recommended to undergo fine needle aspiration (FNA). FNA was reported the tissue to be parathyroid elements. Left thyroid lobectomy and left paratracheal neck dissection along with resection of left inferior parathyroid mass was performed. Intraoperative PTH measurement showed that it returned to the reference range.

A 2.2 cm intrathyroid parathyroid adenoma was identified.

Biography

Dr. Neda Zarrin-Khameh is a pathologist in Houston, Texas and is affiliated with multiple hospitals in the area, including CHI St. Luke's Health-Patients Medical Center and Harris Health Ben Taub General, Quentin Mease and LBJ Hospitals. She received her medical degree from Tehran University of Medical Sciences School of Medicine and has been in practice for more than 20 years.