

SWOT ANALYSIS OF CYTOLOGY IN CLINICAL PRACTICE

Haldun Umudum, MD

Associate Professor of Pathology,

Ufuk University, Ankara, Turkey



WHAT IS SWOT ANALYSIS?

SWOT analysis is a tool for auditing an organization and its environment.

It is the first stage of planning helps marketers, business developers to identify relatively less obvious but effective key issues.



WHAT IS SWOT ANALYSIS- BRIEF HISTORY

This method was created in the 1960s by Edmund P. Learned, C. Roland Christensen, Kenneth Andrews and William D. Book in their book "Business Policy, Text and Cases" (R.D. Irwin, 1969). -

BUSINESS POLICY: TEXT AND CASES

THIRD EDITION

CHRISTENSEN
ANDREWS
BOWER

EXPORT



EDITION

WHAT IS SWOT ANALYSIS?

Sometimes small corporations business owners or institutions need to evaluate a change, a new projects, making decisions about new policies, identifying possible areas for change, or refining and redirecting efforts.



Hepatoscope, For the king of Babylon stands at the parting of the way, at the head of the two ways, to use divination; he shakes the arrows, he consults the household idols, he *looks at the liver*.

WHEN SWOT SHOULD BE USED?

SWOT analyses can serve as a precursor to any sort of company action, such as :

- exploring new initiatives,
- making decisions about new policies,
- identifying possible areas for change, or
- refining and redirecting efforts midplan. -



SWOT IS A DEVICE IN TOOLBOX

In such cases, SWOT and other similar methods helps to improve business or instutional operations.



KEY FACTORS IN SWOT ANALYSIS

Strength

Weakness

Opportunities

Threats



IN SWOT ANALYSIS, STRENGTHS AND WEAKNESS ARE INTERNAL FACTORS

Financial resources (funding, sources of income, investment opportunities)

Physical resources (location, facilities, equipment), rooms, devices etc).

Human resources (employees, volunteers, residents, students) ,

Current processes (employee programs, department hierarchies, software systems, molecular techniques) -



OPPORTUNITIES AND THREATS ARE EXTERNAL FACTORS.

Political and economic regulations,

Market trends (new products and technology, shifts in clinical needs),

Economic trends (local, national and international financial trends)

Funding (donations, legislature and other sources)

Relationships with suppliers and clinicians.



External Environment

Internal Environment



Climate



Economy



Technology



Political



Legal



Competition



Media



Fashion

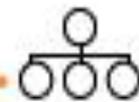
Strategic Planning



Organisational Culture



Human Resource



Organisation Structure



Physical Assets



Profit and Cash Flow



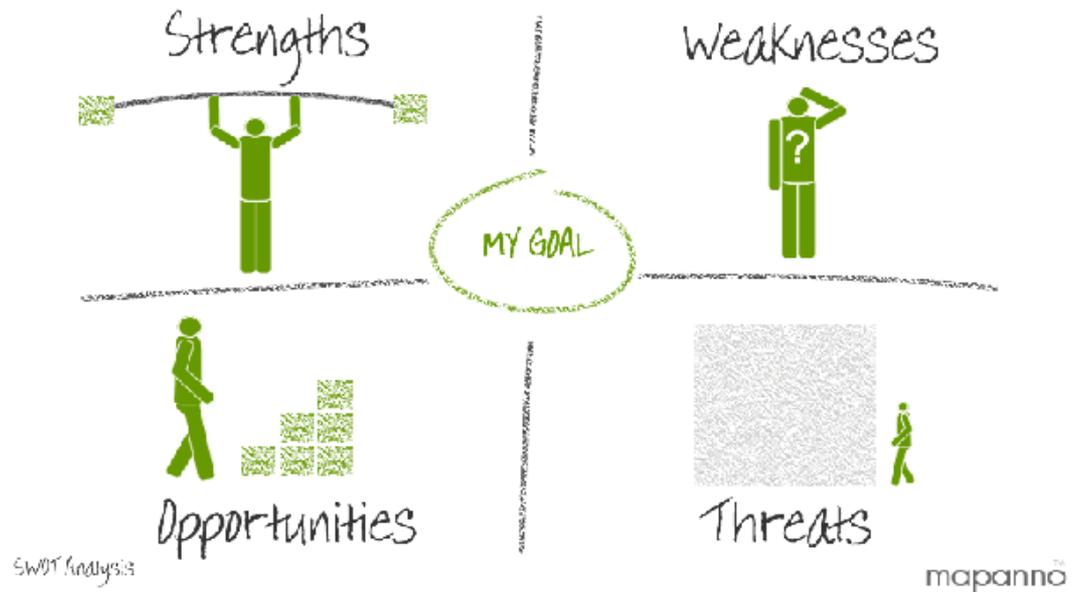
Management

WHAT IS THE AIM OF SWOT ANALYSIS?

One should come up with with some recommendations and strategies based on the results:

Leveraging strengths and opportunities to overcome weaknesses and threats.

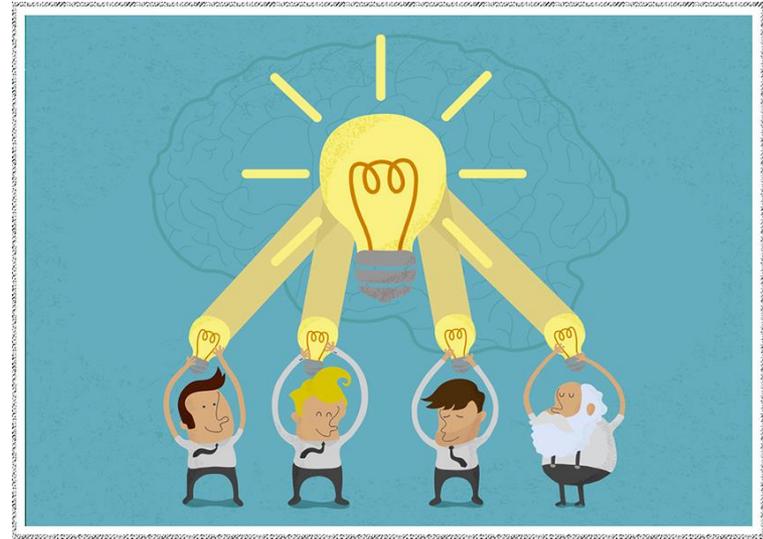
Identify «less obvious» areas.



I AM THE MOST EXPERIENCED (SENIOR) MEMBER OF OUR DEPARTMENT, I KNOW ABOUT EVERYTHING. CAN I DO IT BY MYSELF?

Yes, but performing it with team members (technicians, residents, secretaries) form a “collective knowledge”.

This collective knowledge removes the blind spots in your lab.



SWOT ANALYSIS IN CYTOLOGY PRACTICE

Following information is obtained from our environment: department, friends, clinicians, technicians

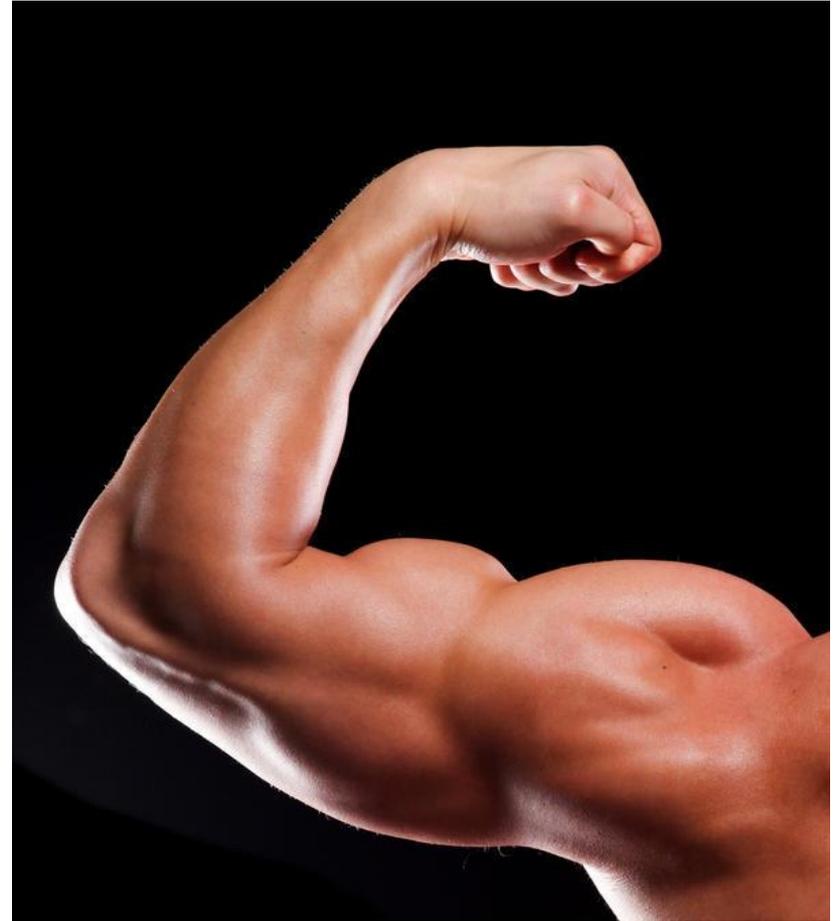
It may be different from your institutions.

You are welcome to contribute, agree or disagree.



Strengths

1. Provides pre-operative diagnosis and faster clinical decision.
2. Quick results (same day possible)
3. Cheaper preparation.
4. No need for expensive devices (microtome, tissue processor etc).
5. Less chemicals are needed.
6. Less invasive (non invasive).
7. No admission (hospitalization) is needed.



STRENGTHS, CONT'D

7. Cost is cheaper for patients and social security systems.
- 8 . Closer to clinicians. On site evaluation of material is possible.
9. A basic cytology lab is extremely easy to be set up.
10. It may be instituted in virtually everywhere (from tents to basement rooms of teaching hospital).
11. More profitable compared to smaller biopsies
12. Funding restrictions in any time would less likely affect a cytology lab.

WEAKNESS

Defensive attitude of pathologist's who dislike cytological assesment.

Time consuming,

Sampling errors,

Diagnostic skills of interpreters are variable.

Perception of cytology among clinicans is varied.

Communication problems with clinicians (what are they asking for, what are we reporting?)



OPPORTUNITIES

"In the middle of difficulty lies opportunity" ~ Albert Einstein



Provide material for fancy molecular techniques,

Imprint cytology make same day diagnosis in tru cut biopsy cases

Less trauma to patient

Faster

Cheaper,

Turnaround time is collapsable.

THREATS (MANY)-1 MEDIA

‘Any new development in diagnostic disciplines, almost always target the microscopic assessment and try to replace it. ‘

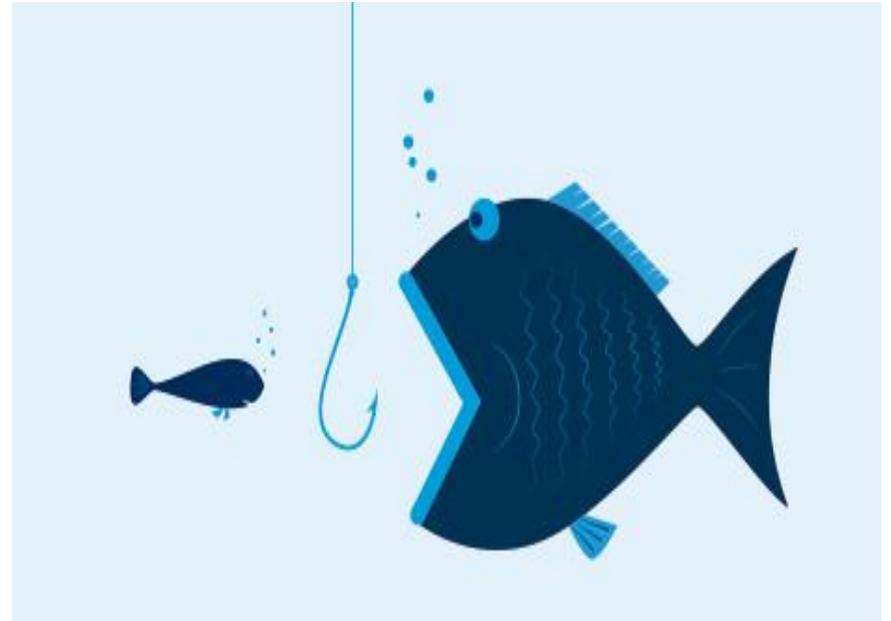
Cancer diagnosis without biopsy
or on blood sample.

HPV testing

«Super duper» molecular tests
(BRAF assessment in thyroid FNA,
BRCA-1 analysis etc).

Liquid biopsy

Cytokeratin 22 analysis of
axillary lymph nodes.



THREATS- CLINICANS

They hate to repeat FNA and explain this to patients.

Some clinicians, may think that it may not yield a diagnostic material in a considerable amount of patients.

So it causes delays.



THREATS-2

Cytology says it is benign or malignant.

Novel techniques do not give a malignant or benign diagnoses.

They just give a number, percentage or positive/negative

Diagnosis of cytology is questionable.

Nobody questions the molecular technique results for false negative, false positive, PPV, NPV etc.

SWOT ANALYSIS IS COMPLETE, WHAT ARE WE GOING TO DO NOW?

Major issue (in this analysis) is the keeping the confidence of clinicians,. Their major concerns are:

1. Nondiagnostic or insufficient cases. (technique or diagnostic hesitancy)
2. Communication with clinicians (how to write in a report that patient needs a repeat FNA).
3. Ratio of grey diagnostic categories

PERSONAL OBSERVATION ABOUT DIAGNOSTIC HESITANCY

A person without confidence on his/her diagnostic skills, would easily use borderline categories even in Pap Smears. (AUS, FLUS or more common nondiagnostic)



EVERYBODY THAT COVERS CYTOLOGY CASES, SHOULD HAVE A BASELINE ABILITY TO DIAGNOSE REGULAR CASES.

Everybody should be able to diagnose regular cases without hesitancy.

Training and building confidence may be of help.

If not, overall confidence about cytology would begin to decrease over the time.



DIAGNOSTIC HESITANCY AND CATEGORIES OF CYTOLOGY CASES

1. Group of cases that any one can diagnose :

Pap Smear

Most of the thyroid cases

Like driving from home to work;
It does not matter if you are
driver for 20 years of
experience or just 6 months.



2. GROUP OF CYTOLOGY CASES THAT CAN BE DIAGNOSED WITH «CONSIDERABLE» EXPERIENCE AND TRAINING IN CYTOLOGY

Urine,

FNA of soft tissue masses

Salivary gland.

Lung

Ascites

Common **malignant** lesions of vital organs (liver, pancreas,,breast etc).



TRAINING AND EDUCATION SHOULD BE CONTINUOUS AND BE PARALLEL TO ROUTINE WORKLOAD.

Academic / Teaching hospital

State hospital

Outpatient clinics

Concept of hospital (trauma center, geriatric patients, diagnosis only centers, hospitals for special demographic groups –military, university students, pediatric etc).



WHAT CLINICIAN DOES EXPECT FROM CYTOLOGY? (EXTERNAL FACTORS)

Facilitate the triage (who needs quick surgery, who may be deferred)

Evidence for referral

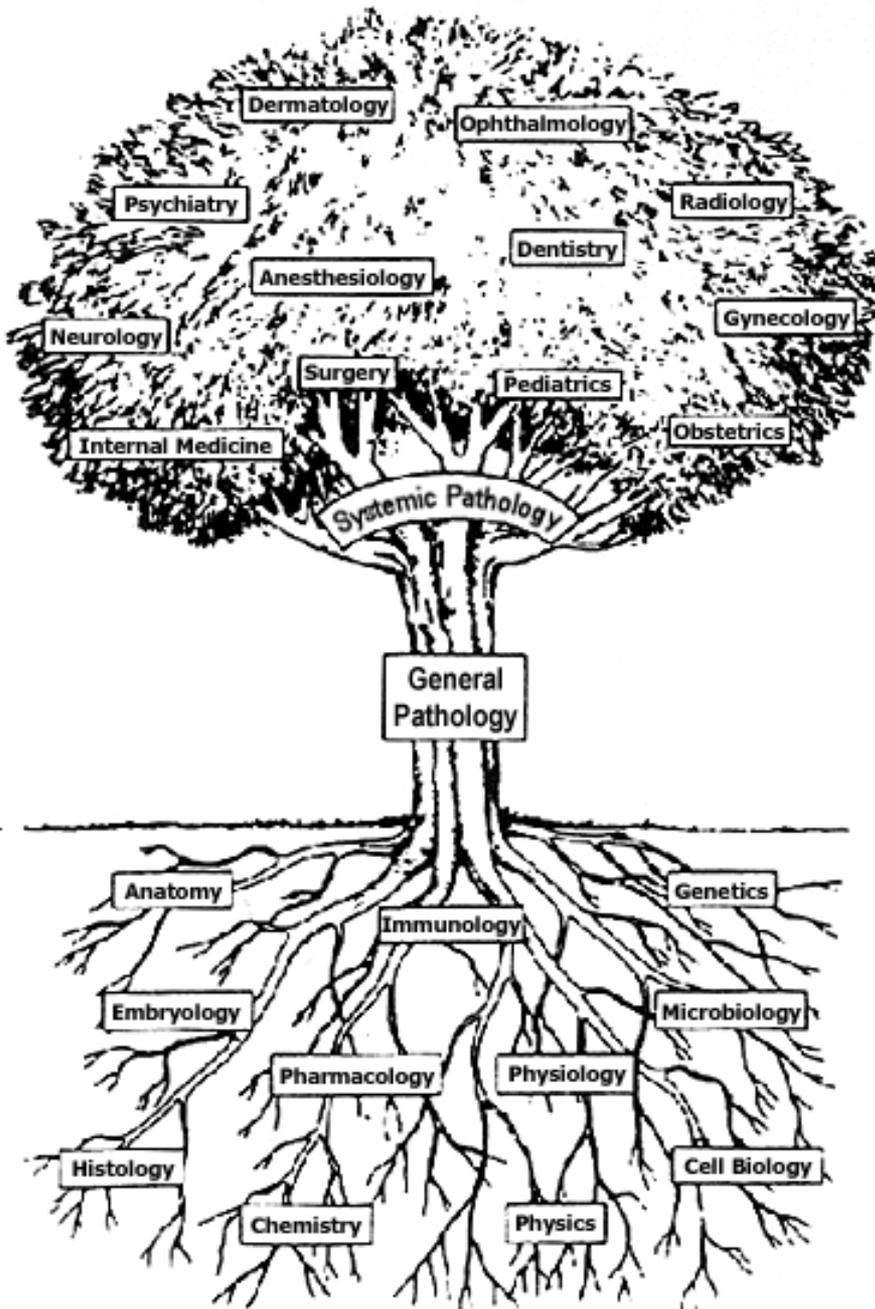
Defining extent of surgery (benign vs malignant).

Specific diagnosis (salivary gland lesions)

Most of the cases, it is a part of guidelines.



THE TREE OF MEDICINE



In near future, cells and tissues will be more important not for diagnosis but also for molecular target analysis.

Cytology in this point would be more significant discipline.

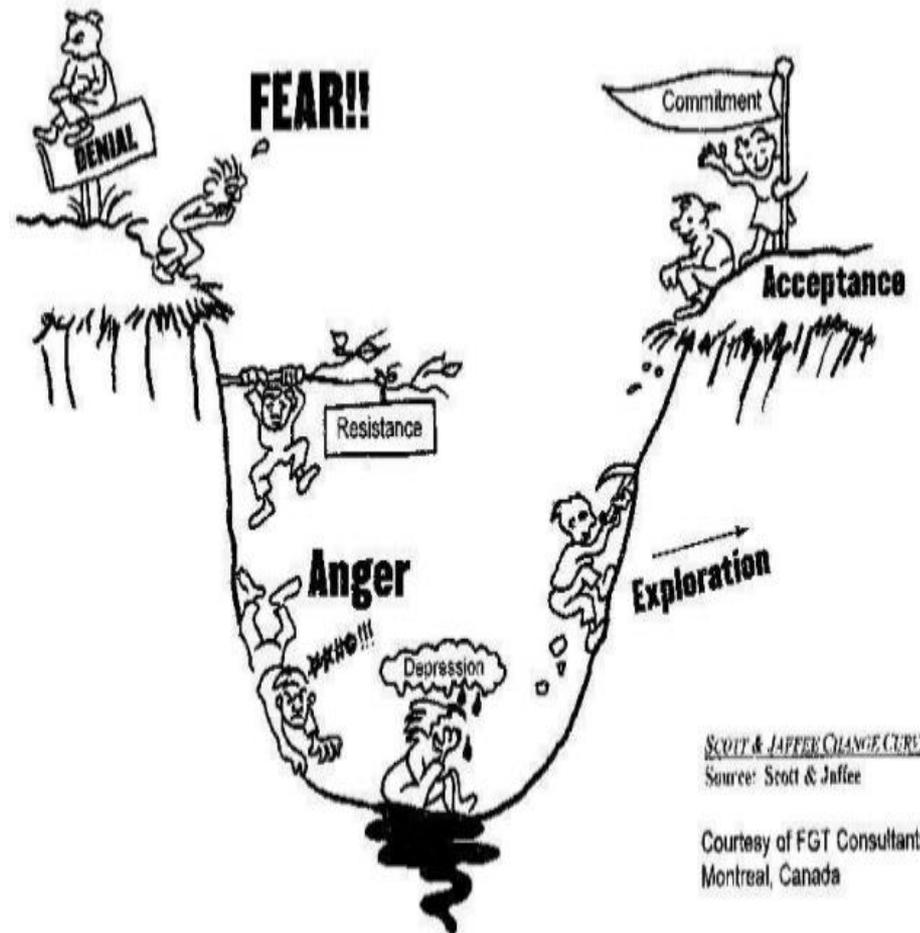


CYTOLOGY IS NOT A DISCIPLINE WHICH IS CONFINED TO A SMALL LABORATORY ANYMORE

Anyone who interests in cytology should also observe :

Changes and demands in diagnostic trends, markets as well as drug companies,

Expectations of clinicians, patients and media.



SCOTT & JAFFER CHANGE CURVE
Source: Scott & Jaffee

Courtesy of FGT Consultants
Montreal, Canada

SOME EXAMPLES FROM CYTIC COMPANY SWOT ANALYSIS IN 2006

What are the major trends in the cytology market?

What opportunities still exist in the cytology diagnostics market?

For next few years will cytology be able to exist in women's health diagnosis market?

The business case is more likely to be successful if:

- It is a statutory/national requirement, which must be implemented; for example, Clinical Pathology Accreditation (UK) Ltd, National Service Framework, NICE guidelines, etc
- The development is part of an existing strategy
- It requires relatively simple management action with few capital or revenue consequences
- It has support in clinical directorates outside pathology
- It has a positive impact on waiting times and waiting lists

The business case is more likely to be unsuccessful if:

- It is insufficiently thought through
- It contradicts other local and national policies
- It is not physically viable
- It is not economically viable
- It is associated with unacceptably high risk
- It is not supported by the clinical director/business manager



Article
Text



Article
info

Review

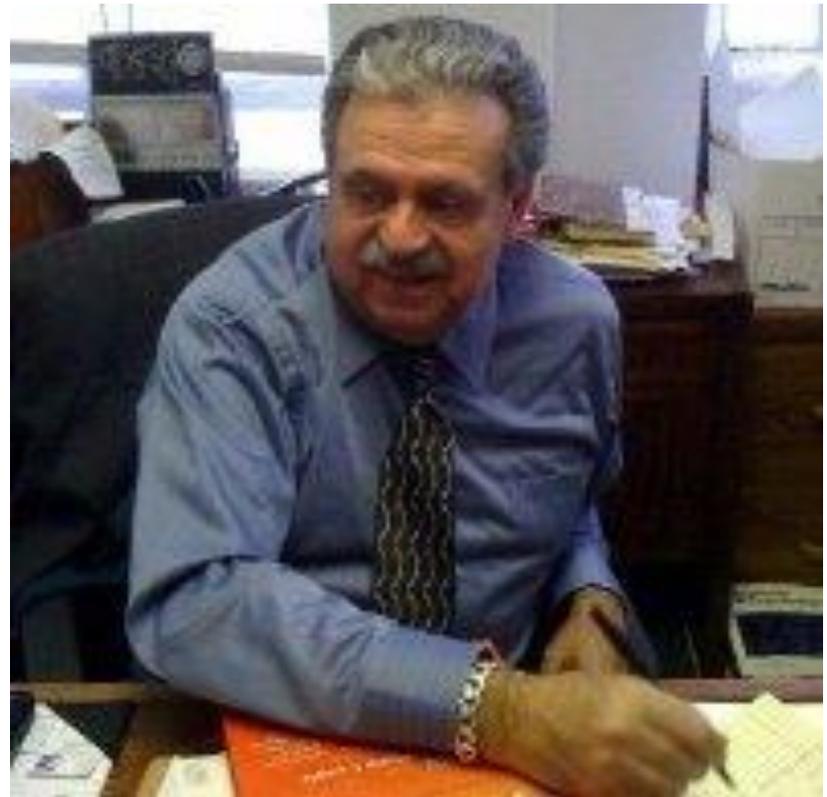
Best Practice No 177 **FREE**

[M J Galloway](#)

1.

'...Who may guess that one day, the needle of cytology would rupture the paraffin barrier that divides pathology and clinicians...'

(Carlos Bedrossian,
probably).



**Department of
Acupuncture
Treatment**

I should not
have come
here.

Don't complain,
We have budget
restriction, this the
best we can.

