Resumé

L'auteur a étudié 14 mongoliens Iraniens, et a discuté les differents problemes concernant tels les facteurs liés à la peristase, les accidents perinataux, le developpement psycho-moteur, les troubles neuro-psychiques, les malformations diverses associées etc.

Une étude synthétique se rapportant aux principales notions récentes sur le mongolisme termine cet exposé.

Summary

The author has studied 14 Iranian mongolian cases, and investigated and discussed their different relevent factors such as: age, conditions of patient and his family, prenatal accidents, psycho-motor development, psycho-neural disorders, different malformations, etc.

A review is also made of the recent information about mongolism.

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Percutaneous Renal Biopsy
A Report of 200 cases*

By

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The clinical diagnosis of renal diseases is not always reliable, in spite of the fact that a large number of laboratory and clinical aids are available. Many authors including Kark et al (1,10), Muehrcke et al (2) Brun and Raaschou (3) and recently Muth (4) have recomended, that needle biopsy of the kidney is a safe and useful tool for the study of renal diseases.

Just a littel more than a decade, since the introduction of the technique the procedure have evolved from a mere research study to a diagnostic tool. In 1958 when one of us (5) discussed in some detail the value of percutaneous needle biopsy of kidney, many of the physicians in Tehran showed their enthousiasm to do biopsy. Since then many cases of renal biopsy have been carried out in Tehran hospitals (6).This evolution was made possible by three factors: 1) The safety of the technique. 2) The high percentage of success in obtaining tissue material, 3) The high percentage of diagnostic, treatment and prognostic values.

Since 1923, when Gwyn described a case of glomerulonephritis diagnosed by surgical biopty, many physicians and surgeons have used an open operation to obtain renal tissue for diagnostic purposes or clinical investigation. In 1934 Ball (7), described his first case of hypernephroma diagnosed by percutaneous aspiration biopsy. But until 1950 only a few scattered renal biopsy were reported. Lindblom and Cazal reviewed all these reports and thought it was a dangerous and hazardous procedure. Later on, Perez (9), Iverson (8), and Brun (12) demonstreted that with

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proper technique, percutaneous aspiration renal biopsy is a safe procedure. The works of Iverson and colleagues have evoked the present attention in renal biopsy but his method was difficult. and later Kark et al (1) and Brun et al (3) report a new technique of percutaneous needle biopsy in prone position. Another modification of the technique has been using the Franklin Vim _ Silverman needle, then it has become the most successful procedure and many authors and clinicians have been able to obtain enough renal tissue material in more than 85%. We used the same needle and the same technique as Kark has described. We have obtained more than 92% satisfactory renal tissue material without any mortality (6), and morbidity rate has been low.

Biopsy procedure:

It was considered safer to obtain the biopsy in the operating theatre. The most important factor in procedure is to localize the correct site of biopsy. We explained previously our procedure (5), which is the technique, of Kark and Muehrcke (10) with a minor modification. On an excretory urograme the mid portion of the right kidney is located. Its distance, lateral to the spinous process is measured. The midway, between outer border of the kidney and outer border of the calix will be the point of biopsy. Then the distance between the point of biopsy from the posterior iliac crest is measured. At this point, we have two lines, that is, 1) the distance between point of biopsy from spinous process (a horizontal line) and 2) the distance between point of biopsy from posterior iliac crest (vertical line). These lines are then transposed to the patient's back while he is lying in prone position over a pillow or sand bag. The skin is prepared with 1% acetyl-trimethyl ammonium bromide (Cetavlon) or 10% alcorolic iodid. After anestheting the skin, the kidney is located with a long lumberpuncture probing needle. The subcutaneous tissue and the intervewing structure down to the capsule of kidney are anesthetized, while locating the kidney. When the probing needle enters the renal capsule it can usually be detected by the sense of touch. This is confirmed by noting the archy movement of the needle with the patient's breathes. The probing needle is removed and the depth of the kidney is tantatively measured. Then the Franklin - Silverman biopsy needle is inserted along the same tract. The biopsy is done with the patient holding his breath, Using this technique, the tissue yield has been very satisfactory. (Table2).

Instead of Franklin _ Vim _ Silverman needle we used Necker's needle for renal biopsy without any better results. Although, we don't have much experience with Mengini's needle but the results seems to be as Necker's.

Indication of renal biopsy:

Any patient with diffuse renal disease who is able to undergo the procedure without danger, renal biopsy can be performed (4) . In 1958 Kark et al mentioned the contraindications to renal biopsy and we feel the same way. Table 1 shows the contraindication to renal biopsy.

Tab. 1_ Contra indication to renal biopsy.✡

1_ Incooperative patients.
2- Large cysts.
3_ Renal neoplasm.
4_ Renal artery aneurysm.
5_ Marked calcifief arteriosclerosis.
6_ Hemorrhagic diathesis.
7_ Single kidney.
8_ Perinephritic abscess.
9_ Hydro or pyonepherosis.
10_ Terminal state of illness.
11_ A blood non protein nitrogen level which is rising and which is over 100mg/100ml. of blood.

Kark et al are avoid renal biopsy in uremie patients, but many authors have done biopsies in uremic patients. Being a littele more conservative, we, too, believe that biopsy could be performed in uremic patients. Aproximately, 5% of our biopsies were in patients with renal failure, none of these patients had any severe complications. In hypertensive patients, the biopsy was done, but in cases with malignant or severe hypertension the biopsy should be done with great cane with a considerable experience hand.

Materials:

200 patients with suspected renal disease comprised our study. Before attempting biopsy, renal function studies were done according to the available methods. Table 2 summeriz the result of percutaneous needle biopsy in 200 patients In majority of these cases the diagnosis was not clear in the biopsy materials.✡✡

Some of these negative biopsies have had repeated attempt and the result was positive. Table 3 shows the end result in 200 patients.

✡ From: Kark et al; Archive of Internal Medicine. Vol. 101, 1958.
✡✡ Table 2 Analyses of renal tissue taken by percutaneous needle biopsy 200 patients.

Tab. 2- Analysis of renal tissue taken by percutaneous needle biopsy in 200 patients.

	No. of biopsy	%
Number of biopsy carried on 200 patients	210	100
Biopsy specimen adequate for interpretation (20r more glomerulus present)	190	91
Biopsy specimen with less than two glomeruli	6	3
No tissue obtained or of liver, fatty tissue etc...	23	6

Tab. 3- The end result of percutaneous needle biopsy in 200 patients.

	No. of pts.	%
Number of patients	200	100
Biopsy specimen adequete (2 or more glomeruli)	190	95
Biopsy specimen in adequete (Less than 2 glomeruli)	6	3
No renal tissue	4	2

Renal tissue was considered adequate for histological evaluation when 2 or more glomeruli were seen in the sections. It must be kept in mind that with more glomeruli present in a section more accurate diagnosis can be made. It is clear that even with the most careful technique in an experienced hand, it is not always easy to obtain a satisfactory piece of kidney each time. In our experience the negative result were 23 cases. Most of these were at the time when we start doing the biopsy. Pathological evaluation considered by Kark adequate when he got five or more glomeruli (1) and Muth et al considered 8 or more glomeruli (4). We found it useful, when we got 2 or more glomeruli. However, somtime having only one glomerulus one can makes a definite diagnosis. Examples are those of amyloidosis which with one glomerulus we made a clear – cut diagnosis.

Histological findings:

Renal tissues were obtained in 190 cases of all biopsies. The histological findings are tabulated in table 4.

Tab. 4- The histological analysis in 200 patients:

Type of lesions	Total No.	Male	Female
Subacute glomerulonephritis	49	27	22
Membranous glomerulonephritis	37	22	15
Chronic glomerulonephritis	23	13	10
Lipoidic nephrosis	23	15	8

Renal amyloidosis	22	10	12
Chronic pyelonephritis	17	7	10
Interstitial nephritis	5	2	3
Nephroangiosclerosis	3	3	--
Tubular cell atrophy and vacuolization	3	2	1
Normal kidney	5	3	2
Insufficient, liver, fatty tissue	23	13	10
Total	210	117	93

Most of our patients clinicaly had nephrotic syndrome.

Subacute glomerulonephritis; this was seen in 49 patients. All these patients had nephrotic syndrome. In these patients the most important histological findings were:

a) Proliferation and swelling of capillary endothelium.
b) Proliferation of capsular and glomerular tuft epithelium.
c) Thickening of basement membrane.
d) Some exudation of leukocytes.
e) Adhesion of glomerular tuft.

The above mentioned are the charateristic histological findings but varied greatly in different patients. The most characteristic ones were epithelial proliferation and thickening of basement membrane.

Membranous glomerulonephritis; this was the second in proportion, and were seen in 37 patients. The most important histological findings were as follows:

a) Thickening of basement membrane, local or diffuse.
b) Some endo-epithelial proliferation of glumerular tufts.
c) Destruction of capillary wall or microthrombi of glumerular capillary.
d) Some fibrinous exudation or leukocytes.

Our histological findings in the remainder are the same as mentioned in pathological textbooks. In three cases the only histologic changes were swelling, vacuolization and more or less atrophy at tubular epithelium mainly of proximal convoluted tubules, which we were not able to lable them to a definite diagnosis.

Age – Sex.

Our youngest patient was a boy of 18 month, who had nephrotic syndrome in which the histology findings showed a lipoidic nephrosis. And

the oldest one; a 72 years old man with sever nephro – angiosclerosis of senile type. Table 5 shows the sex incidence in 200 patients.

Tab. 5- Sex incidence in 200 patients:

	No	Per cent
No. of patients	200	100
Male	112	56
Female	88	44

Complications:

They are dependent on several factors as follows:

a) Avoidence of pre biopsy studies; i.e, in addition to a history and full physical examination, a blood coagulation prophile, carefule evaluation of the patient's ability to cooperate, a clear rontgenograme of kidneys and a freshly obtained blood typed and cross matched.

b) Overlooking ot contraindications data as tablated in table 1.

c) Avoidence of post–biopsy cares. The most important of these are complete rest of patient with a full post – operative care. However, even a careful performed biopsy in a well experienced hand, some inevitable complications may be encontered.

In literature, there are many lists of complications. We feel it is usefule to make a table (Tab. 6) comparing the complications we encountered to Kark et al, Brun et al and Muth.

Tab. 6 - Complications in 210 percutaneous renal biopsies and comparing with other authors's

Complications and symptoms	Our 210 P.⚙⚙		Kark 500 P.⚙⚙		Brun 500 P.		Muth 200 P.	
	No	%	No	%	No	%	No	%
Deaths	0	–	0	–	0	–	0	–
Operative intervention	0	–	0	–	0	–	0	–
Anuria	1	0.5	0	–	0	–	0	–
Infection of kidney or bacteriemia	1	0.5	1	0.2	0	–	0	–
Gross hematuria for less than 3days	15	7.5	26	5.2	40	8	10	2
Prolonged hematuria	0	–	3	0.6	33	6.6	9⚙	2

⚙⚙ A number of patients had two or more of the above complications or symptoms.

⚙ Two patients required blood transfusion.

Severe pain or renal colic	1	0.5	14	2.8	37	7	2	0.4
Perirenal hematoma	3	1.5	3	0.6	1	0.2	2	0.4
Back pain	4	2	22	4.4	37	7	0	–
Mild ileus	1	0.5	2	0.4	0	–	0	–
Transfusion	0	–	2	0.4	4	0.8	2	0.4

The complications listed above more or less can be over looked. The morbidity rate in our series is 13%. Only 4 cases or 2 percent required definitive therapy. 3 of them were peri–renal hematoma. One of them, a female with coronary obstructive disease which was under treatment of aethylis bis - 3'3 - (hydroxycumarinyl) acetat (Tromexan) without a good pre – biopsy study. On performing renal biopsy, we had peri - renal hematoma. She recovered very soon and no operative intervention was necessary. On two other peri – renal hematoma there were a severe back pain followed by nausea and vomiting. Physical examination revealed spasm and guardening of the back muscle and by bimanual palpation of the abdomen a mass were found. The extent of hemorrhage in the back was not evaluated. Both of them received bandage and narcotic and the mass last for a week or so, and gradually subsided.

In the case of severe pain in biopsy site and renel colic, the patient was a young male of 22 years of age. We advised him to bed-ridden compeletely. He had bandage and narcotic. The pain lasted for two days and gradually disappeared.

Discussion

Many complications of renal biopsy are described in the literature. Their incidence are surprisingly low. As far as we know, no mortality have been recorded. Most of the complications need not any drastic therapeutic intervention. Regarding the diagnosis, therapeutic and prognosis velues, the renal biopsy is a useful tool. In "Parrish and Howe" (11) cases renal biopsy established the diagnosis in 52% of patients, which the clinical impressions were incorrect. Kark et Muehrcke reported the similar figures. It is especially valuable in the diagnosis in cases of nephrotic syndrome, where there are a wide variety of pathologic disorders.

Also in the treatment of diseases of kidney, renal biopsy has a great value, Brun has used percutaneous renal biopsy to select anuric patients for dialysis on the artificial kidney. It is important to note renal

biopsy has not severe danger to the kidney, and in some instances necropsy offered no evidence of damage to the kidney or the adjacent organs.

In many hospitals and private clinics in Tehran, renal biopsies are performed by interested and properly trained phsicians. Although renal biopsies are of little value in the diagnosis of surgical diseases of kidney and are used to study the diffuse or so called medical diseases of the organ, but some of our surgeons in some selected cases prefer to do biopsy before surgical intervention. Our biopsy materials are from general hospitals mostly of teaching hospitals of medical school, but we have done many in other hospitals. Table7 shows the hospitals where our biopsies were performed.

Tab. 7- Hospitals where our biopsies have been attempted.

Name of hospital	Ward	No	%
Pahlavi	Medical ward 1	58	27.6
Pahlavi	Medical ward3	44	21
Bahrami	Pediatric ward	29	14
Pahlavi	Infectious diseases and Tropical Med. ward.	12	5.7
Pahlavi	Medical ward 2	10	5
Pahlavi	Pediatric ward	7	3.2
Rail road	Medical ward	7	3.2
Municipal,	Medical	5	2.3
Private and other H.		38	18
Total		210	100

Summary

In the diffuse medical diseases of kidney, percutaneous renal biopsy is a valuable, safe and hazardless procedure. With the aid of this nearly new technique renal pathology, the natural history of renal diseases and the response of renal diseases to therapy, as well as the prognosis of renal disorders can be evaluated.

We have analysed 210 percutaneous biopsies in Tehran. Complications were observed in 13% of cases, there is no mortality and no patient required drastic therapeutic intervention. Anuria, peri-renal colic and peri-renal hematoma were the only serious complications, which were seen in 4 patients, and were readily controled with simple measures.

We obtained renal tissue in 95% cases of our patients and in 91% of them the tissue was adequate for clear diagnosis.

Like other authors, we believe that the procedure, when properly performed, can give a far more valuable informations about the patients without any realy dangerous risk.

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