Results

Table (3): Demographic characteristics of the study group:

character		Cases (N =100)
Age (years)	<40	81
	≥40	19
	Mean ± SD	32.87 ± 8.71 (years)
Parity	NG	9
	Parous women	91
	median	3

Table (4): clinical pattern of AUB:

Pattern of AUB	N. of cases	Percent
Menorrhagia	38	38%
menometrorrhagia	24	24%
Polymenorrhea	17	17%
Intermenstrual spotting	15	15%
Postmenopausal bleeding	6	6%
Total	100	100%

Table (5): 3DSIS findings of the studied patients (N = 100):

3DSIS findings		N	%
NAD(-Ve)		30	30.0
Endometrial Polyp		30	30.0
Submucous myoma		24	24.0
Thick endometrium	*Most probably endometrium carcinoma*	4	4.0
	Most probably endometrial hyperplasia	11	11.0
Thin endometrium	*(Most probably atrophic endometrium)*	1	1.0

Table (6): 3DSIS classification of detected submucous uterine fibroids (N = 24):

3DSIS	**N**	**%**
Type 0	8	33
Type 1	12	50
Type 2	4	17

Table (7): 3DSIS findings in relation to age:

3DSIS findings	**Age**				χ^2	p
	<40 years (N = 81)		≥40 years (N = 19)			
	N	%	N	%		
NAD(-Ve)	26	32.0	4	21.0	14.23	0.006
Endometrial polyp	25	31.0	5	26.3		
Submucous myoma	22	27.0	2	11.3		
Thick endometrium	8	10.0	7	37.0		
Thin endometrium	0	0.0	1	5.0		

Chi–square test: There is a statistical significant difference between the groups of age as regards the distribution of 3DSIS findings P<0.05.

Table (8): 3DSIS findings in relation to parity:

3DSIS findings	**Parity**				χ^2	P
	NG (N = 9)		Parous women (N = 91)			
	NO	%	NO	%		
NAD(-Ve)	4	45.0	26	28.0	1.6	0.8
Endometrial polyp	3	33.0	27	30.0		
Submucus myoma	1	11.0	23	25.0		
Thick endometrium	1	0.0	14	9.0		
Thin endometrium	0	0.0	1	1.0		

Chi–square test: There was no statistical significant difference between the groups of parity as regards the distribution of 3DSIS findings P>0.05.

Table (9): Hysteroscopic findings of the studied patients (N = 100):

Hysteroscopic findings		**N**	**%**
NAD(-Ve)		38	38.0
Endometrial polyp		29	29.0
Submucus myoma		20	20.0
Thick endometrium	*Most probably endometrium carcinoma*	4	4.0
	Most probably endometrial hyperplasia	8	8.0
Thin endometrium (Most probably atrophic endometrium)		1	1.0

Table (10): Hysteroscopic classification of detected submucous uterine fibroids (N = 20)**:**

Hysteroscopy	N	%
Type 0	7	35
Type 1	10	50
Type 2	3	15

Table (11): Hysteroscopic findings in relation to age:

Hysteroscopic findings	**Age**				χ^2	p
	<40 years (N = 81)		≥40 years (N = 19)			
	N	%	N	%		
NAD(-Ve)	34	42	4	21	11.59	0.02
Endometrial polyp	22	27	7	37		
Submucous myoma	18	22	2	11		
Thick endometrium	7	9	5	26		
Thin endometrium	0	0	1	5		

Chi–square test: There is a statistical significant difference between the groups of age as regards the distribution of hysteroscopic findings P<0.05.

Table (12): Hysteroscopic finding in relation to parity:

Hysteroscopic findings	**Parity**				χ^2	P
	NG (N = 9)		Parous women (N = 91)			
	N	%	N	%		
NAD(-Ve)	5	56	33	36	2.54	0.16
Endometrial polyp	3	33	26	29		
Submucus myoma	1	11	19	21		
Thick endometrium	0	0	12	13		
Thin endometrium	0	0	1	1		

Chi–square test: There was no statistical significant difference between the groups of parity as regards the distribution of hysteroscopic findings P>0.05.

Table (13): Agreement between 3DSIS and hysteroscopic findings:

Findings		**Hysteroscopy**				K
		-ve (N =38)		+ve (N =62)		
		N	%	N	%	
3DSIS	-ve (N = 30)	27	27.0%	3	3.0%	0.69
	+ve (N = 70)	11	11.0%	59	59.0%	

Kappa test: There was a good agreement between 3DSIS and hysteroscopic findings.

Table (14): positive cases by both 3DSIS and hysteroscopy (N = 59):

Findings	**3DSIS findings**		**Hysteroscopic findings**	
	N	%	N	%
Endometrial polyp	27	46	26	44.1
Submucus myoma	22	36.6	20	33.9
Thick endometrium	9	15.7	12	20.3
Thin endometrium	1	1.7	1	1.7

Table (15): The discrepancy in 11 cases –ve by hysteroscopy and +ve by 3DSIS as:

3DSIS findings	+ve cases	
	N	%
Submucus myoma	2	18.2
Endometrial polyp	3	27.3
Thick endometrium	6	54.5

And 3 cases diagnosed as endometrial polyp by hysteroscopy and –ve by 3DSIS.

Table (16): Agreement between 3DSIS and hysteroscopic findings according to the age:

Findings		Hysteroscopy				K
		-ve (N = 38)		+ve (N = 62)		
		N	%	N	%	
3DSIS in cases aged < 40 years	**-ve (N = 26)**	24	30.0	2	2.0	0.69
	+ve (N= 55)	10	12.0	45	56.0	
3DSIS in cases aged ≥ 40 years	**-ve (N = 4)**	3	16.0	1	5.0	0.68
	+ve (N = 15)	1	5.0	14	.0	

Kappa test:

On stratification of cases according to age <40 or ≥40 there is a good agreement between 3DSIS and hysteroscopic findings in both age groups.

Table (17): Agreement between 3DSIS and hysteroscopic findings according to the parity:

Findings		**Hysteroscopy**				**K**
		-ve (N = 38)		**+ve (N =62)**		
		N	**%**	**N**	**%**	
3DSIS in cases NG	**-ve (N = 4)**	3	34.0%	1	11%	0.34
	+ve (N = 5)	2	22.0%	3	33.0%	
3DSIS in cases multipara	**-ve (N = 26)**	25	27.0%	1	1%	0.78
	+ve (N = 65)	8	9%	57	63%	

Kappa test:

On stratification of cases according to parity there was poor agreement between 3DSIS and hysteroscopic findings in NG but there was a good agreement among parous women.

Table (18): Histopathological findings (HP)**:**

Histopathological findings (HP)	**N**	**%**
Normal endometrium	27	27.0
Endometrial polyp	32	32.0
Submucosal myoma	19	19.0
Endometrial hyperplasia	18	18.0
Endometrial cancer	3	3.0
Atrophic endometrium	1	1.0

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Table (19): Comparison between 3DSIS, DHS and HP among the studied patients:

GROUP (N=100)	**3DSIS**		**DHS**		**HP**	
	N	%	N	%	N	%
Normal	30	30%	38	38%	27	27%
Uterine polyp	30	30%	29	29%	32	32%
Submucous myoma	24	24%	20	20%	19	19%
Endometrial hyperplasia	11	8%	8	8%	18	18%
Endometrial cancer	4	4%	4	4%	3	3%
Thin endometrium	1	1%	1	1%	1	1%

Taking histopathological findings as a gold standard for diagnosis, sensitivity, specificity, +ve predictive value and –ve predictive value of 3DSIS and DHS were calculated in different groups of endometrial histopathology

Table (20): sensitivity, specificity, +ve predictive value, –ve predictive value and accuracy of 3DSIS findings in relation to Histopathology:

3DSIS versus Histopathology (N = 100)	**Endometrial polyp**	**Submucosal myoma**	**Endometrial hyperplasia**	**Endometrial cancer**	**overall**
True(+)ve	30	19	11	3	70
false(+)ve	0	5	0	1	0
True(–)ve	68	76	82	96	27
false(–)ve	2	0	7	0	3
Sensitivity	93.75%	100%	61.11%	100.00%	95.89%
Specificity	100%	93.83%	100%	98.97%	100%
+ve predictive value(PPV)	100%	79.17%	100%	75.0%	100%
–ve predictive value(NPV)	97.14%	100%	92.13%	100%	90%
Accuracy	98%	95%	93%	99%	97%

Table (21): sensitivity, specificity, +ve predictive value, – ve predictive value and accuracy of DHS findings in relation to Histopathology:

DHS versus Histopathology(N = 100)	**Endometrial polyp**	**Submucosal myoma**	**Endometrial hyperplasia**	**Endometrial cancer**	**overall**
True(+)ve	29	19	8	3	62
false(+)ve	0	1	0	1	0
True(–)ve	68	80	82	96	35
false(–)ve	3	0	10	0	3
Sensitivity	90.62%	100%	44.44%	100.00%	95.38%
Specificity	100%	98.77%	100%	98.97%	100%
+ve predictive value(PPV)	100%	95%	100%	75.0%	100%
–ve predictive value(NPV)	95.77%	100%	89.13%	100%	92.11%
accuracy	97%	99%	90%	99%	97%

Table (22): Complications of 3DSIS:

Complication	**N**	**%**
None	0	0.00
pain	92	92.0
Vasovagal attack	0	0.0
Extrusion of balloon catheter	8	8.0

Table (23): Pain during 3DSIS:

Nature of pain	**N**	**%**
Minimal discomfort	50	50.0
Acceptable discomfort	40	40.0
Tolerable pain	10	10.0
Severe intolerable pain	0	0.00

Statistical analysis:

Data are expressed as mean ±SD (range) or as number (%) of cases. Comparison of proportions between both groups was made by using the $\chi 2$ (**Chi–square**) test.

Kappa test*:* to measure the agreement between two observers.

The level $P < 0.05$ was considered the cut-off value for significance.

Analysis was performed by using the Statistical Package for the Social Sciences (SPSS, version15).

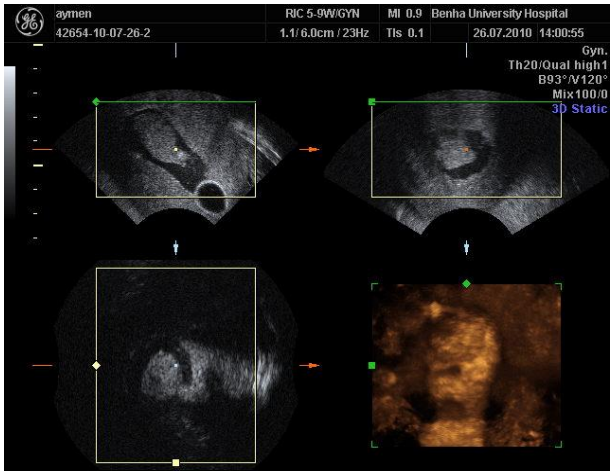

Figure (23): Endometrial polyp at the anterior wall of the uterine cavity.

Figure (24): Endometrial polyp.

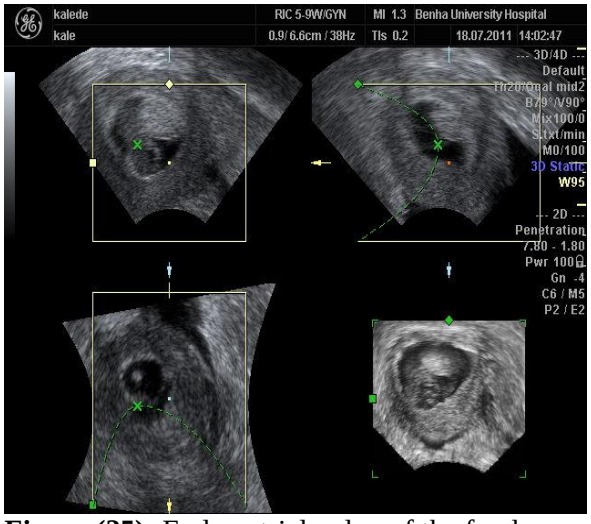

Figure (25): Endometrial polyp of the fundus.

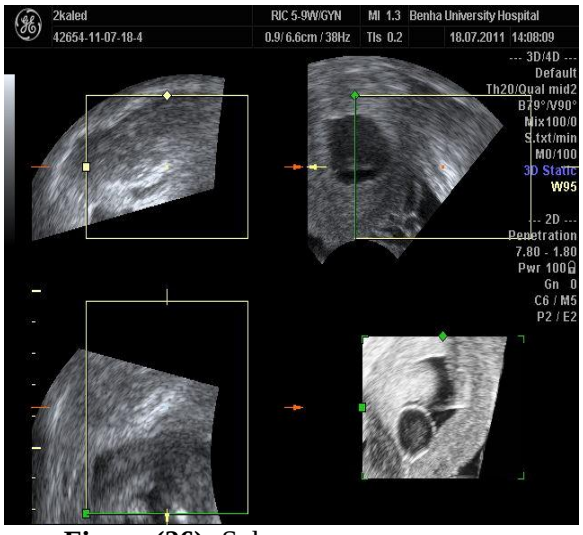

Figure (26): Submucous myoma**.**

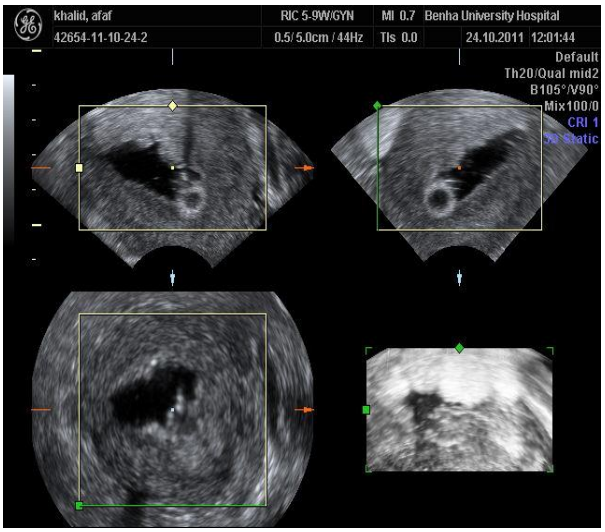

Figure (27): Thick endometrium.

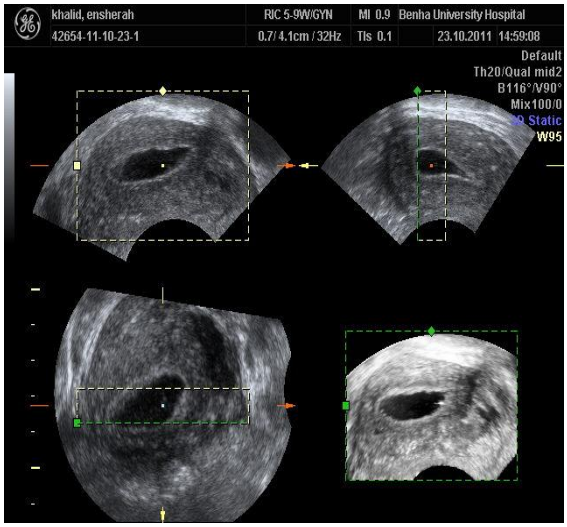

Figure (28): Thin endometrium.

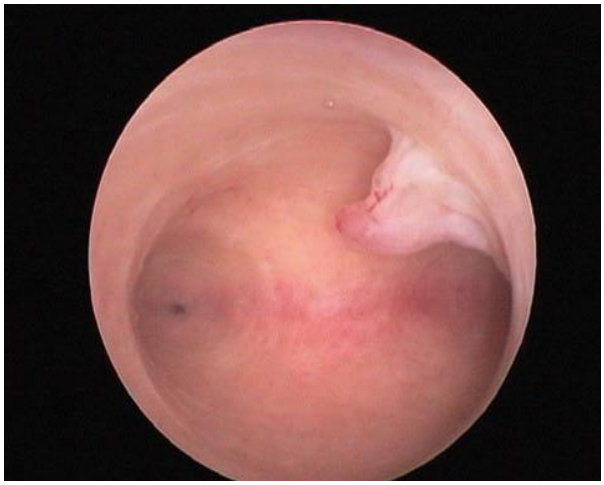

Figure (29): Endometrial polyp.

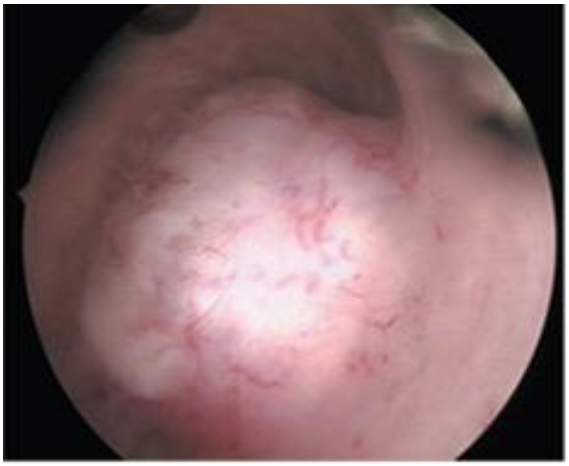

Figure (30): Submucous myoma**.**

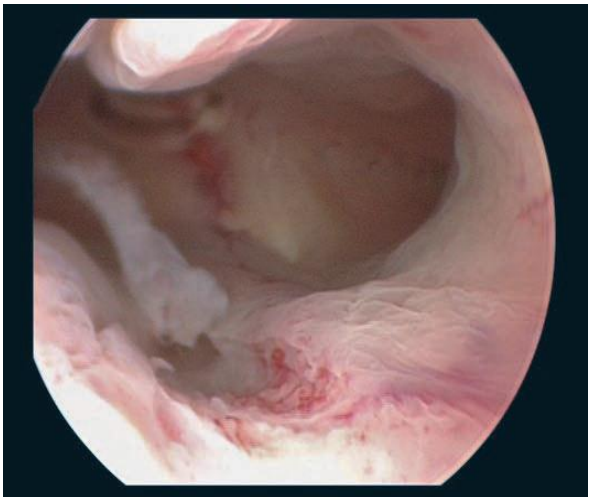

Figure (31): Thick endometrium.

Figure (32): Thin endometrium.