Thematic progression (TP) is examined in the text of a communication between a cardiologist and a general practitioner concerning a patient, offering a clinical diagnosis of the patient's condition. Analysis of the discourse looks at the field, tenor, and mode of the communication as a context for TP. The methods of analysis are first described, and the TP is then mapped. What constitutes theme in the clauses of the text is noted, and how words and nominal groups form TP is discussed. Considerations such as genre (a class of communicative events in which members share communicative purpose) and frames (inferences made from a body of knowledge in order to understand an utterance) are explored. After a discussion of TP and some of its shortcomings in application to the text in question, the analysis concludes with suggestions for making TP more explicit in the teaching of English for Special Purposes. (Contains 19 references.) (MSE)
THEMATIC PROGRESSION IN A CARDIOLOGIST'S TEXT:
CONTEXT, FRAMES AND PROGRESSION

BY

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KAWASAKI, JAPAN
CONVENTIONS

Single quotation marks ['____'] signal a quotation is from Appendix A, which is referred to in the paper as PC Text.

Double quotation marks ["____"] signal that the quotation is not from Appendix A (the PC text).
Some scholars suggest analysis of Theme and Rheme is ill understood (for example, Levinson 1994:88-89). Others dismiss the notion of Theme altogether (for example, Huddleston 1988:137-74). In contrast to both opinions is the work by Danes (1970 and 1974) on Thematic Progression. Thematic Progression (TP), as understood by Danes, is the study of how Theme in text is developed from clause to clause or larger stretches of text.

The decision to use a complete text is made in the hope that all significant TP patterns will be labelled correctly. The decision does not, regrettably, allow for as much coverage of some elements of Theme as might be expected (such as M. Ghadessey ed. 1995). It is hoped that the benefits of a complete analysis, i.e., a thorough application of Danes' method, outweigh the drawbacks of ignoring other more standard means of analysis.

The paper first examines Field, Tenor, and Mode in order to establish some context for the analysis of TP. TP analysis in the paper contains numerous references to Theme/Rheme and to Given/New. These terms are explained in the second part of the paper. The third part of the paper gives a outline of the methods used in analyzing TP. The fourth part of the paper is devoted to analyzing the PC text using the methods described in the first three parts of the paper.

To undertake the mapping of TP, the paper lists what is Theme in the clauses of a text written by a paediatric cardiologist (PC text, see appendix A). The paper then gives some analysis as to how words and nominal groups form TP. Considerations such as
genre, a class of communicative events in which members share some set of communicative purposes (Swales 1990, McCarthy 1991:51-62), and frames, inferences made from a body of knowledge in order to understand an utterance (Whittaker 1995: 107, Minsky 1977, Tannen 1979), are, however, necessary to give a more complete account of TP than Danes' models can. After a lengthy discussion of TP and some shortcomings it has in regard to applicability to the PC text, the paper concludes with a few suggestions for ESP in regard to making TP more explicit to a specific group of learners.

CONTEXT OF SITUATION

Context of Situation is described by Halliday (Halliday 1994:390 and Halliday and Hasan 1990:12-14) as having three headings: Field, Tenor, and Mode. The Field of the PC text is medical, more specifically, the sub-field is clinical diagnosis (see glossary for all medical terms). The Tenor is formal, in keeping with the professional relationship between a specialist and a general practitioner (GP). The Mode is written. In addition, the channel of the PC text (Halliday and Hasan's 1990:58-59 description of channel) is formulaic.

To return to Field, the cardiologist/specialist (both terms are used in the paper) has seen a patient whose name is Robert. The PC text is intended for Robert's GP. The primary purpose of the PC text is to give a clinical diagnosis of Robert's condition to his GP.

The medical and formal Tenor of the PC text is evident in some meronymic relationships now discussed (see Halliday 1994:332
and Halliday and Hasan 1990:79-81). The nominal group "aortic area" is the "whole" in the "part:whole" relationships. Some of the parts in this meronymic relationship are 'a quiet precordium', 'ejection click at the apex', and 'stenosis'. Some other signals of the formal Tenor are the opening and closing of the PC text which avoid any overly familiar invocations and closings (see appendix A).

This rough sketch of Field, Tenor, and Mode leads to some possible notions about genre. A lengthy discussion of genre (see Swales 1993:45-58 for genre description) would be quite helpful for establishing frames. None the less a lengthy treatment is not possible here. Still, most of the criteria Swales sets for a genre are met by the PC text. The paper is in no position to make any broad claims about genre as the data is insufficient to support any such claims.

In support of there being frames (Tannen 1979) at work is the fact that the vertical progression of the PC Text resembles the vertical progression of a medical interview (see below for a brief description and see Eggly 1998 for a thorough description of a typical medical interview). The standard medical interview has six parts according to Eggly (1998:28). These six parts are possible frames of reference for another physician. Only five of these parts are seen clearly in the PC text. For the purposes of the paper, the description of a standard medical interview is confined to six labels used further down in the paper:

1. Establishing Rapport With Patient Section
2. History Of The Present Illness
3. Past Medical History Section
4. A review of current or past problems involving the various systems within the body. Not contained in the PC text.
5. Physical Exam Section
6. Treatment Section

In spite of its obvious influence on Thematic choice the analysis of genre and possible frames is brief in order to move onto the more central tools of analysis.

**ASSIGNING THEME AND RHEME IN CLAUSES**

Theme, according to Halliday, is "the point of departure of the message" (Halliday 1994:37). Another explanation compatible with Halliday's analysis is that Theme is "the idea that is represented by the constituent at the starting point of the clause" (Bloor and Bloor 1997:72). At this point, it is useful to mention that "all clauses in English incorporate what is known as Topical Theme", which refers to a "Participant, Circumstance or Process" (Bloor and Bloor 1997:72). Most of the examples of Theme in the paper are classified as Topical Theme. Further distinctions of Theme are explained when necessary.

The broader category of Theme has a counterpart in Halliday's analysis-- Rheme. Rheme is described as "the rest of the message" (Bloor and Bloor 1997:72). There are other descriptions of Theme and Rheme but for the purposes of this paper they do not give adequate consideration to what Halliday labels Given and New (see Halliday 1994: 298-299, see Firbas 1972, and Danes 1970 and 1974
for varying treatment of Given/New distinctions). It is prudent to explain further the usefulness of Given and New in analyzing TP.

Given and New (Halliday 1994: 298-299) are analytical tools that aid in explaining information structure in a clause. Given means information that is presented as recoverable by the speaker. New is information that is presented as not recoverable to the listener. These definitions are based on spoken English. The paper accepts Fries' observation that Theme and Given often conflate in written text (Fries 1994: 229-234).

THEMATIC PROGRESSION

Bloor and Bloor (1995:86-94) present four models of Thematic Progression (as before TP). The four models are nearly identical to Danes' description (Danes 1970:132-146), but the model of Theme and Rheme they use and this paper uses is taken from Halliday (Halliday 1994:34-42).

To illustrate the models briefly, first, the Constant Theme Pattern consists of the following:

Clause 1 Theme A + Rheme A
Clause 2 Theme A + Rheme B
Clause 3 Theme A + Rheme C

Next, the Linear Theme Pattern has the following relationships:

Clause 1 Theme A + Rheme B
Clause 2 Theme B + Rheme C
Clause 3 Theme C + Rheme D

To continue the description, The Split Rheme Pattern:
Clause 1  Theme A + [Rheme B + Rheme C]
Clause 2  Theme B + Rheme
Clause 3  Theme C + Rheme

Danes (Danes 1970:138) identifies that these examples of TP all share one common property: the particular Themes are recoverable from the Rhemes of the preceding utterances (in this paper "utterance" is understood as clause. (Please see Danes 1970:134-35 for his understanding of utterance). To account for clauses which are not recoverable from the preceding clause another pattern must be described. Danes labelled it "TP with Derived Themes". In this paper, following Bloor and Bloor (1997:93-94), the term is shortened to Derived Themes.

Derived Themes are not easily diagrammed. Bloor and Bloor (1995:94) give this description: Each of the subordinate themes [...] are said to be derived from the Hypertheme. The example given by Bloor and Bloor (1995:93-94) is Rats as Hypertheme and Squirrels, Porcupines, and Rat-like rodents as Subordinate Themes. This thumbnail sketch of TP should suffice for the purposes of this paper.

THEMATICAL PROGRESSION IN THE PC TEXT

The opening (line 1), the Establishing Rapport With Patient Section (lines 2-4), the History of the Present Illness Section (line 5), and the Past Medical History Section (line 6) are given below. The focus of the medical interview is on the patient in these frames. It would not be surprising, then, if Robert or a pronoun reference to Robert were to be found as Theme.
1. Dear Dr. Sivilotti, I saw Robert, now 23 years of age, in my office on November 27th, 1992, for follow-up.

2. He is now attending the University of Western Ontario and has a degree in Politics.

3. He now has post-graduate studies majoring in Russia.

4. Basically, he has been doing well.

5. He has no symptoms.

6. As you will remember, I had seen him in the past with the diagnosis of a bicuspid aortic valve with mild stenosis.

7. When I examined him on Nov. 27, 1992, he looked healthy.

The opening, 'Dear Doctor Sivilotti', is marked (Bloor and Bloor 1995:76-77, 81-82) and is an Interpersonal Theme, addressing the reader directly (Bloor and Bloor 1997:76-77, 81-82). The Topical Theme in line 1, 'I', refers to the specialist. Within the Rheme of line 1 is the word 'Robert', a patient of both physicians. Though not part of Danes' conception of TP, it is worth recognizing that line 1 contains nodes, local growth points for future expansion, elaboration, and extension (Matthiessen 1995:27). The nodes are the cardiologist, Robert, appointments between Robert and the cardiologist. In accordance with Matthiessen's notion of Theme as an enabling resource, the PC text does, indeed, expand, elaborate, or extend the nodes found in line 1.

Line 2 begins with the Topical Theme 'He' (Robert). Theme in the first clause in line 2 is, therefore, retrievable from Rheme
in line 1. However, there are two clauses in line two. The second clause of line 2 retrieves its Topical Theme, "he", from clause one of line 2 though it is not written in the text. This omission of a pronoun reference is an example of "ellipsis" (Bloor and Bloor 1997:87-89). To identify TP a brief look at lines 3, 4, and 5 seems to provide some important evidence. As 'He' is Topical Theme in line 2 so is it Theme in lines 3-5. There is one distinction that should be made even though it does not affect TP. Line 4 starts with 'Basically', a Textual Theme which highlights that the description of patient will continue (Bloor and Bloor 1997:77-79). Lines 1-5 mirror the template for a Constant Theme Pattern. Robert, as suggested above as plausible, is the focus of TP in these frames.

Unfortunately, line 6 brings the Constant Theme Pattern to a close. In fact, line 6, 'As you will remember, I had seen him in the past with the diagnosis of a bicuspid aortic valve with mild stenosis', seems to progress more from line 1 as it reintroduces the nodes found in line 1. The node of cardiologist is filled by the Topical Theme 'I' in lines 1 and 6. The significance of 'I' is now examined.

The paper considers 'I' to be a Hypertheme. The cardiologist refers to himself as 'I' not as an individual but as a cardiologist and professional in the field. In accordance with Field, Tenor, and Mode the use of "I as specialist and colleague" is understood within the text.

To continue the analysis of lines 1 and 6, Theme in lines 1
and 6 is marked (Bloor and Bloor 1995:76-78). Line 6 begins with an Interpersonal Theme, 'As you will remember,'. Line 1 also begins with an Interpersonal Theme, 'Dear Dr. Sivilotti,'. The use of Interpersonal Theme in both instances seems to suggest some sort of equivalent relationship being maintained between the doctors as the forms of address do not delineate any different social status (Levinson 1994: Chapter 2).

Line 7 is the start of the Physical Exam Section (PES) of the text. The probability of Robert being Theme here decreases as the frame is usually focused on physical properties, not the person. The first part of the PES is a general checkup without cardiological apparatus:

7.) When I examined him on November 27th, 1992, he looked healthy.
8.) Weight 100 kg.
9.) Height 183 cm.
10.) Pulse/respiration normal.
11.) Blood pressure 130/80 mmHg right arm.
12.) Examination of the heart showed a quiet precordium.
13.) There was a Grade III/VI ejection systolic murmur over the aortic area with an ejection click at the apex.
14.) There was questionable thrill at the supra-sternal notch.

Within line 7 there is, once again, a marked Theme and a Topical Theme: When I examined him on November 27, 1992, he. The Topical Theme, 'he', is retrievable from Rheme in line 6 (him), which means it follows Danes’ classification where Theme is retrievable from the preceding Rheme. This allows for a
classification of Linear Theme Pattern. The use of 'he' is also an example of reference, 'Robert' is the word to which 'he' refers (Bloor and Bloor 1997:88-89, Halliday and Hasan 1976:37-52). Unfortunately, Theme in line 7, 'he', is not Theme in line 8. It is necessary to examine Rheme in line 7 to try find any pattern of TP.

Rheme in line 7, 'looked healthy', does seem to form a rough link with 'Weight'. However, to find a closer connection it is necessary to return to Rheme in line 1. Rheme in line 1 contains the word 'follow-up'. The lexical item 'follow-up', defined as "a check on a patient who has been examined before (Peter Collin 1996:136)" can be matched as superordinate to 'Weight' in that weighing a person is part of the procedures done without cardiological apparatus by a cardiologist. 'Weight' is therefore a Subordinate Theme of 'follow-up', the Hypertheme.

Francis' model of advance labels, a lexical item with "predictive and organizing functions" (Francis 1996: 84), can verify the function of 'follow-up' as a Hypertheme. The nominal group 'Weight' is in both Given position and Theme position (Halliday 1994:299-302 and Fries 1996 :229-232). As Theme and Given are often found in the same position in written text (Fries 1996: 232-234), the fact that 'Weight' is in Given and Theme position can be understood as pointing to a hypothesis that 'Weight' has an advance label ('follow-up') in the PC text.

Not only 'Weight' but some other nominal groups in Theme position and Given position can be also be identified as stemming
from Hypertheme 'follow-up'.

Line 8: Weight
Line 9: Height
Line 10: Pulse/Respiration
Line 11: Blood Pressure
Line 12: Examination of the heart
Line 15: ECG
Line 16: 2D-echocardiogram

The lexical item 'follow-up', then, labels a number of procedures in the PC text. 'Follow-up' is, therefore, considered in the paper to be a Hypertheme. There could be a case made for 'healthy' performing the same function as advance label for the nominal groups found in lines 8, 9, 10, and 11. 'Follow-up', though, can be a Hypertheme for all nominal groups mentioned above. That a Hypertheme is also an advance label illustrates the significance of Francis' analysis for following TP.

Theme within the first part of the PES still needs to be explained more completely. Accordingly, TP in lines 12-14 is now examined. 'Examination of the heart' is a Subordinate Theme of 'follow-up'. However, to find the source of Theme in lines 13 and 14 it is necessary to look at the rheme of line 12. The nominal group 'a quiet precordium' is Rheme in line 12. The precordium is described further in lines 13 and 14, which are clauses that are identifiable as existential processes (Halliday 1994:119-138). The Rheme of line 12 is, therefore, the place from which Theme in lines 13 and 14 is derived. It is labelled Split Rheme Pattern.
The existential processes described in lines 13 and 14 have a dummy subject as Theme, which is often the case when describing relational processes (Halliday 1994:142-143). Martin (Martin 1995:228) states the use of "there" in an existential clause "sets up as the point of departure that an Existent will be presented" and "the new information comes within the Rheme as the Existent". None the less, for the purposes of the paper TP is still fairly straightforward in the clauses in lines 13 and 14. This concludes the analysis of the first part of the PES.

The second part of the Physical Exam Section is a single-line paragraph, which is glossed roughly as a checkup with an echocardiogram.

15.) **ECG** showed no definite abnormality.

The theme, 'ECG', is part of the Derived Themes pattern which has 'follow-up' as Hypertheme. It is reasonable to consider an examination with an echocardiogram as part of a cardiologist's follow-up examination.

The lines 16 -19 comprise the last part of the PES, a check-up with 2-D cardiogram:

16.) **2D-echocardiogram with Doppler** was carried out.
17.) **The aortic valve** remained bicuspid.
18.) **The maximum flow velocity across the valve** measured 3.2 m/sec, which translated into a systolic pressure gradient of 40
mmHg systolic, which put his aortic stenosis in the mild group. 19.) There was minimal aortic insufficiency by Doppler.

The theme of line 16, '2D-echocardiogram with Doppler', is derived from the Hypertheme 'follow-up'. Rheme in line 16, 'was carried out' is an example of ellipsis (Bloor and Bloor 1997:96-98). The clause itself does not have a Beneficiary so the reader is forced to provide one from the context. As Robert is patient it seems certain that the 2D-echocardiogram was performed on Robert's aortic area. It is also obvious that 2D-echocardiogram is not a Goal here, but is indeed Range in that there is no chance that the 2D-echocardiogram was actually moved (see Bloor and Bloor 1997:114-116 for explanation of Range). Therefore, the unwritten part is probably something that could be constructed such as "on the aortic valve". Such a construct seems retrievable from Context of Situation.

If one accepts the possible construction for line 16 then TP between lines 16 and 17 can also be understood to be a Linear Theme Pattern. To be in accordance with a Linear Theme Pattern, Line 17 should have a theme retrievable from the constructed Rheme of line 16, which is in fact the case. 'The aortic valve' is Theme in line 17 and is retrievable from the context described in line 16.

Rheme in line 17 contains the word 'bicuspid'. Bicuspid refers to the blood flow from the left atrium to the ventricle through a two-pointed aortic valve instead of a three-pointed aortic valve (Merriam-Websters 1993:111). It therefore continues
the Linear Theme Pattern as Theme in the first clause of line 18 is 'The maximum flow velocity across the valve'. The Linear Theme pattern has taken us from line 16 to the first clause of line 18. However, line 18 has two more clauses, non-defining relative clauses, for which TP is difficult to label for important reasons Halliday (1994:226-229) discusses in some detail. Some of his reasons are taken up next.

The two non-defining relative clauses are defined as Expansion Elaborating clauses (Halliday 1994:226-229). The first 'which' refers to the entire primary clause, 'The maximum flow velocity across the valve measured 3.2/sec'. The second 'which' refers to the rheme of the clause preceding it, 'translated into a systolic pressure gradient of 40 mmHg systolic'. The two non-defining relative clauses are therefore difficult to label in terms of TP. Perhaps it is best not to do so as they do not easily match the models the paper is using.

Theme in line 19 'There [...] minimal aortic insufficiency', another existential process clause, resembles a Linear Theme Pattern. It's antecedent is the measurement '3.2 m/sec' found in the Rheme of the first clause in line 18. The progression between line 18 and 19 is not identical to the model of TP in the paper, but it resembles a Linear Theme Pattern. Line 19 marks the end of the PES section. Interestingly, Robert as Theme did not appear during the PES after line 7. This suggests that the frame of reference, the PES, affects TP.

The next passage under consideration is the Treatment Section
which marks a return to some nodes found in line 1 such as 'I' (specialist) and 'He' (Robert). The frame here suggests that specialist and patient, medication, and the patient's condition itself might be Theme as all of these factors are relevant to treatment. The text:

20.) The clinical diagnosis remained the same.
21.) He has a bicuspid aortic valve with mild stenosis.
22.) The obstruction is not enough for me to worry about.
23.) He should avoid strenuous competitive sports as much as he can, but he should be able to carry on normal activities with no difficulty.
24.) He needs endocarditis prophylaxis whenever it is necessary.
25.) I would like to see him again in another two to three years for review.

Theme in line 20, 'The clinical diagnosis', is linked to Rheme in line 6, 'with the diagnosis of a bicuspid aortic valve with mild stenosis' and might also be a Subordinate Theme of 'follow-up'. The use of the deictic 'The' suggests that Theme in line 20 is related to the diagnosis described in line 6. The paper suggests this because the other words and nominal groups that function as Subordinate Themes do not have a deictic.

Perhaps more importantly, Rheme in line 20, 'remained the same', is both anaphoric and cataphoric (Halliday and Hasan 1976:14-17). It refers to line 6 as well as the entire PES. It
also points toward lines 21-25, which relate the particulars of the specialist's prescription based on the diagnosis of Robert. Theme in Line 21, 'He' reminds the reader that clinical diagnosis is centred on the patient, not the properties of the aorta. TP from line 20 to line 21 does not match the paper's models of TP. The lines are clearly related none the less, most probably because of anaphoric and cataphoric 'the same'. Line 22 does however follow the paper's models. It matches the Linear Theme Pattern. 'The obstruction' is recoverable from Rheme in line 21, 'bicuspid aortic valve with mild stenosis'.

Line 23 though is not part of a Linear Theme Pattern. In lines 23 and 24, 'he' reappears in Theme position. All the information in lines 23-24 is Given (author's data) in that the patient, the doctor, and the cardiologist know the previous clinical diagnosis and the Prescription from the previous clinical diagnosis. Though the antecedent of lines 23-24 is known, TP is difficult to label using Danes' models. There are still a few other aspects of lines 23-24 that should be noted as they seem to be related to the frame.

In lines 23-24 the cardiologist uses some forms of modulation which are best defined as proposals (Halliday 1994:89-91 and 356-363). The two mood choices 'should' and 'needs' signal that propositions are being made. At line 23, the specialist begins to show his professional opinion toward the patient and the heart condition using modulation. The use of modulation ends at line 24 as does the theme 'he'. As suggested above, the frame of
possibilities for Theme, 'I' (the specialist), 'Robert', medication, i.e., 'endocarditis prophylaxis', and 'the obstruction', are found in this frame.

Theme in line 25 is 'I' (specialist). This seems to be a politeness choice affecting Theme. As noted above, 'I' can be considered Hypertheme in the PC text. These two factors seem to account for Theme in line 25. In line 25 the nodes opened in line 1 are all taken up again, which points the possibility that line 25 closes the nodes found in line 1.

The last discernable section of the PC text, which is not part of a medical interview, highlights the relationship between the GP and specialist:

Line 26.) Thank you for referring this patient.
Line 27.) I remain, Yours sincerely, M.D. Li M.D. F.R.C.P.(C), F.A.C.C. Paediatric Cardiologist

Theme in line 26 is another example of ellipsis. Topical Theme, 'I', is not written in the text. Theme in line 27 'I' is written. Interestingly, lines 1, 6, and 27 contain both 'I' (specialist) and some reference to the GP such as 'you' or 'Yours' which suggests the importance of maintaining the professional relationship between the two doctors.

CONCLUSIONS

The paper has attempted to outline Thematic Progression in the PC text. Four models, given by Danes originally, have been
identified in the PC text. Some sections of the PC text have TP that is much easier to follow, in particular the Constant Theme Pattern in lines 1-5. The Physical Exam section is, of course, much more difficult to locate any pattern of progression unless the Hypertheme 'follow-up' has been identified. These findings are within the parameters of discovery outlined by Danes (Danes 1970 and 1974). The detailed analysis above of Theme did not allow for many conclusions to be made. A few results from the study are now discussed.

The PC text, roughly speaking, combines a narrative of science (Myers 1996:179-190) and a narrative of patient (author's term). The narrative of science is found within the PES and is labelled in advance by 'follow-up'. The narrative of patient is found within lines 2-5, line 21, and lines 23-24. The narrative of science emphasizes the relation of properties to entities. This emphasis on science has the textual consequence of Robert or a pronoun reference to Robert not being present as Theme. In contrast, the narrative of patient seems to emphasize "the immediate encounter" (Myer's term) of the physician (lines 2-5) or the physician's proposals for the patient (lines 23-24). The textual realisation of Robert as Theme seems to signal the narrative of patient.

In regard to ESP, genre (Swales 1993:33-61), only mentioned briefly above, is, clearly, related to Thematic Progression in the PC text. The frames of the medical interview seem to influence whether Theme is part of a narrative of science or narrative of

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patient. Attention to genre and frames could then, perhaps, help medical students who first language is not English understand the structure of follow-up letters. Of course, the PC text would have to be proven to be part of a genre.

Thematic choices most suitable for the narrative in question could be made more explicit if frames are taken into account. Medical interviews are a significant part of a specialist's job in that thousands of medical interviews are performed by specialists in their careers (Eggly 1998:28). Some attention given to TP in follow-up letters might be a worthwhile endeavour not only facilitate the writing of the letters but also to help uncover textual evidence of the multiple discourses that are taking place during the interviews themselves.

(word count 3982)
GLOSSARY OF MEDICAL TERMS

Abnormality
Form or action which is not normal.

Aortic Area
The region near and around the aorta.

Aortic Stenosis
Condition where the aortic valve is narrow.

Aortic Valve
Valve with three flaps, which is situated at the opening into the aorta. It carries all arterial blood from the heart.

Apex
Top of the heart.

Bicuspid
With two points.

Clinical Diagnosis
Refers to a physical examination of patients by doctors in contrast to surgery or a laboratory test or experiment.

Doppler
A system that measures velocity by using a shift in frequency.

ECG
Echocardiogram. Recording of heart movements, using ultrasound.

Ejection Click
Sending out a sound with force.

Endocarditis
Inflammation of the lining of the heart.
Ejection Systolic Murmur

Refers to a sound, the beating of the heart when it contracts as it pumps blood out. This examination was carried out by auscultation, i.e., with a stethoscope.

Systolic Murmur is a murmur heard in midsystole, that is when the ejection volume and velocity of the blood flow are at their maximum.

Follow-up

Check on a patient who has been examined before.

40 mmHg Systolic

Forty millimetres mercury.

Maximum Flow Velocity

Maximum speed of flow of blood across the valve. The valve, in this case, is between the left atrium and the left ventricle.

Minimal Aortic Insufficiency

The flow of blood through the aorta is near normal functioning.

Mild Stenosis

Condition where the aortic valve is narrow in a non-severe measure.

Questionable Thrill

Vibration, usually felt by palpation, i.e., by use of hand.
Quiet Precordium

A precordium is part of the thorax over the heart. Quiet precordium usually describes the finding of an examination by auscultation, i.e., using a stethoscope. The finding here is a GLC sound of some sort.

Supra-ternal Notch

A notch in the midline at the upper end of the sternum. easily felt with a finger placed at the base of the neck, in the front, between the two clavicles.

Systolic Pressure Gradient

Difference in pressure, measured in mm of Mercury, between the left atrium and left ventricle of the heart in "systole", i.e., during contraction of the ventricles.

2D-Echocardiogram

An echocardiogram with an added dimension. The added dimension is a monitor that offers the physician a view of the valve in question (aortic valve).
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